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### MINISTRY OF IRRIGATION AND POWER NOTIFICATION

*New Delhi, the 26th June 1956*

**S.R.O. 1455.**—In exercise of the powers conferred by section 37 of the Indian Electricity Act, 1910 (IX of 1910), the Central Electricity Board hereby makes the following rules, the same having been previously published, as required by sub-section (1) of section 38 of the said Act, namely:—

#### RULES

#### CHAPTER I

#### PRELIMINARY

**1. Short title and commencement.**—(1) These rules may be called the Indian Electricity Rules, 1956.

(2) They shall come into force at once.

**2. Definitions.**—(1) In these rules, unless the context otherwise requires.

- (a) “the Act” means the Indian Electricity Act, 1910;
- (b) “accessible” means within physical reach without the use of any appliance or special effort;
- (c) “ampere” means a unit of electric current and is the unvarying electric current which when passed through a solution of nitrate of silver in water, in accordance with the specification set out in Annexure I, deposits silver at the rate of 0.001118 of a gramme per second;

the aforesaid unit is equivalent to the current which, in passing through the suspended coil of wire forming part of the instrument marked “Government of India Ampere Standard Verified” when the suspended coil is in its sighted position, exerts a force which is exactly balanced by the force exerted by gravity in Calcutta on the counter balancing iridio-platinum weight of the said instrument;

- (d) “Annexure” means an Annexure to these rules;
- (e) “apparatus” means electrical apparatus and includes all machines, fittings, accessories and appliances in which conductors are used;
- (f) “bare” means not covered with insulating material;
- (g) “cable” means a length of insulated single conductor (solid or stranded) or of two or more such conductors, each provided with its own insulation, which are laid up together. Such insulated conductor or conductors may or may not be provided with an overall mechanical protective covering;

- (g) "flexible cable" means a cable consisting of one or more cores each formed of a group of wires, the diameter and the physical properties of the wires and the insulating material being such as to afford flexibility;
- (h) "circuit" means an arrangement of conductor or conductors for the purpose of conveying energy and forming a system or a branch of a system;
- (i) "circuit breaker" means a device, capable of making and breaking the circuit under all conditions, and unless otherwise specified, so designed as to break the current automatically under abnormal conditions;
- (j) "concentric cable" means a composite cable comprising an inner conductor which is insulated and one or more outer conductors which are insulated from one another and are disposed over the insulation of, and more or less around the inner conductor;
- (k) "conductor" means any wire, cable, bar, tube, rail or plate used for conducting energy and so arranged as to be electrically connected to a system;
- (l) "conduit" means rigid or flexible metallic tubing or mechanically strong and fire resisting non-metallic tubing into which a cable or cables may be drawn for the purpose of affording it or them mechanical protection;
- (m) "covered with insulating material" means adequately covered with insulating material of such quality and thickness as to prevent danger;
- (n) "cut-out" means any appliance for automatically interrupting the transmission of energy through any conductor when the current rises above a predetermined amount, and shall also include fusible cut-out;
- (o) "danger" means danger to health or danger to life or any part of body from shock, burn, or other injury to persons, or property, or from fire or explosion, attendant upon the generation, transmission, transformation, conversion, distribution or use of energy;
- (p) "dead" means at or about earth potential and disconnected from any live system:

Provided that apparatus separated from a live conductor by a spark gap shall not be deemed to be "dead";

NOTE.—The term "dead" is used only with reference to current carrying parts when these parts are not live.

- (q) "earthed" or "connected with earth" means connected with the general mass of earth in such manner as to ensure at all times an immediate discharge of energy without danger;
- (r) "earthing system" means an electrical system in which all the conductors are earthed;
- (s) "electrician" means a person over 21 years of age who is competent for the purposes of the rule in which the term is used and who has been appointed in writing by the lessee, owner, agent or manager of any installation;
- (t) "enclosed sub-station" means any premises or enclosure or part thereof, being large enough to admit the entrance of a person after the apparatus therein is in position, containing apparatus for transforming or converting energy to or from a voltage at or above medium voltage (other than transforming or converting solely for the operation of switchgear or instruments) with or without any other apparatus for switching, controlling or otherwise regulating the energy, and includes the apparatus therein;
- (u) "enclosed switch station" means any premises or enclosure or part thereof, being large enough to admit the entrance of a person after the apparatus therein is in position, containing apparatus for switching, controlling or otherwise regulating energy at or above medium voltage but not for transforming or converting energy (other than for transforming or converting solely for the operation of switchgear or instruments), and includes the apparatus therein;

- (v) "guarded" means covered, shielded, fenced or otherwise protected by means of suitable casings, barrier, rails or metal screens to remove the possibility of dangerous contact or approach by persons or objects to a point of danger;
- (w) "Inspector" means an Electric Inspector appointed under Section 36;
- (x) "Inspector of Mines" means an Inspector appointed under the Mines Act, 1952 (XXXV of 1952);
- (y) "installation" means any composite electrical unit used for the purpose of generating, transforming, transmitting, converting, distributing or utilizing energy;
- (z) "intrinsically safe" as applied to apparatus or associated circuits shall denote that any sparking that may occur in normal working is incapable of causing explosion of inflammable gas or vapour;
- (aa) "lightning arrester" means a device which has the property of diverting to earth any electrical surge of excessively high amplitude applied to its terminals and is capable of interrupting follow current if present and restoring itself thereafter to its original operating conditions;
- (ab) "live" means electrically charged;
- (ac) "metallic covering" means mechanically strong metal covering surrounding one or more conductors;
- (ad) "neutral conductor" means that conductor of a multi-wire system, the voltage of which is normally midway between the voltages of the other conductors of the system;
- (ae) "non-licensee" means a person generating supplying, transmitting or using energy to whom any of the provisions of Part III of the Act apply;
- (af) "occupier" means the owner or person in occupation of the premises where energy is used or proposed to be used;
- (ag) "ohm" means a unit of electric resistance and is the resistance offered to an unvarying electric current by a column of mercury at the temperature of melting ice 14.4521 grammes in mass of an uniform cross-sectional area and of a length of 106.3 centimetres; the aforesaid unit is represented by the resistance between the terminals of the instrument marked "Government of India Ohm Standard Verified" to the passage of an electric current when the coil of wire, forming part of the aforesaid instrument and connected to the aforesaid terminals is in all parts at a temperature of 30°C;
- (ah) "open sparking" means sparking which owing to the lack of adequate provisions for preventing the ignition of inflammable gas external to the apparatus would ignite such inflammable gas;
- (ai) "overhead line" means any electric supply-line which is placed above ground and in the open space but excluding live rails of a traction system;
- (aj) "owner", "agent" and "manager" of a mine have the same meanings as are assigned to them in the Mines Act, 1952 (XXXV of 1952);
- (ak) "portable" means so designed as to be capable of being moved while in operation;
- (al) "portable hand lamp" means a portable light-fitting provided with suitable handle, guard and flexible cord connected to a plug;
- (am) "section" means a section of the Act;
- (an) "span" means the horizontal distance between two adjacent supporting points of an overhead conductor;
- (ao) "street box" means a totally enclosed structure, either above or below ground containing apparatus for transforming, switching, controlling or otherwise regulating energy;
- (ap) "supplier" means a licensee, a non-licensee or any other supplier of energy;
- (aq) "switch" means a manually operated device for opening and closing or for changing the connection of a circuit;
- (ar) "switchgear" shall denote switches, circuit breakers, cut-outs and other apparatus used for the operation, regulation and control of circuits;

- (as) "system" means an electrical system in which all the conductors and apparatus are electrically connected to a common source of electric supply;
- (at) "transportable apparatus" means apparatus which is operated in a fixed position but which is so designed as to be capable of being moved readily from one place to another;
- (au) "volt" means a unit of electro-motive force and is the electric pressure which, when steadily applied to a conductor, the resistance of which is one ohm will produce a current of one ampere;
- (av) "voltage" means the difference of electric potential measured in volts between any two conductors or between any part of either conductor and the earth as measured by a suitable voltmeter and is said to be:

"low" where the voltage does not exceed 250 volts under normal conditions subject, however, to the percentage variation allowed by these rules;

"medium" where the voltage does not exceed 650 volts under normal conditions subject, however, to the percentage variation allowed by these rules;

"high" where the voltage does not exceed 33,000 volts under normal conditions subject, however, to the percentage variation allowed by these rules.

"extra high" where the voltage exceeds 33,000 volts under normal conditions subject, however, to the percentage variation allowed by these rules.

(2) All other words and expressions used herein and not defined shall have the meanings respectively assigned to them in the Act.

**3. Authorization.**—(1) A supplier or a consumer, or the owner, agent or manager of a mine, or the agent of any company operating in an oil-field or the owner of a drilled well in an oil-field or a contractor for the time being under contract with a supplier or a consumer to carry out duties incidental to the generation transformation, transmission, conversion, distribution or use of energy may authorise any person for the purpose of any or all of the following namely:— sub-rule (2) of rule 36, clause (a) of sub-rule (1) of rule 51, clause (a) of sub-rule (1) of rule 64, sub-rule (2) of rule 110, sub-rules (1) and (4) of rule 121, sub-rule (4) of rule 123, rule 124 and sub-rule (8) of rule 125.

(2) No person shall be authorized under sub-rule(1) unless he is competent to perform the duties specified in the rules for the purpose of which he is authorized.

(3) No person shall be deemed to be authorized under sub-rule (1) unless his name has been entered in a list maintained at the office or premises of the person authorizing him, and giving the purposes for whom such person is authorized and the entry has been attested by the authorized person and the person authorizing him.

(4) Every list maintained under sub-rule (3) shall be produced before an Inspector when required.

## CHAPTER II

### INSPECTORS

**4. Qualifications of Inspectors.**—No person shall be appointed to be an Inspector unless—

- (a) he possesses a degree or diploma in electrical engineering from a recognised University or College or qualifications equivalent to such degree or diploma; and
- (b) he has been regularly engaged for a period of at least eight years in the practice of electrical engineering of which not less than two years have been spent in an electrical or mechanical engineering workshop or in generation, transmission, or distribution of electricity, or in the administration of the Act and the Rules made thereunder, in a position of responsibility.

**5. Entry and inspection.**—(1) Any Inspector or any officer appointed to assist an Inspector may enter, inspect and examine any place, carriage or vessel in which he has reason to believe that there is any appliance or apparatus used in the generation, transmission, transformation, conversion, distribution or use of energy and may carry out tests therein.

(2) Every supplier, consumer, owner and occupier shall afford at all times all reasonable facilities to any such Inspector or officer to make such examinations and tests as may be necessary to satisfy himself as to the due observance of the provisions of the Act, the terms of the licence (if any) and these rules.

(3) Every supplier and every owner of a generating station or of a high or extra-high voltage installation shall, if required so to do by an Inspector, provide reasonable means for carrying out all tests, prescribed by or under the Act, of the appliances or apparatus used for the supply or use of energy by him as the case may be.

(4) An Inspector, or any officer appointed to assist an Inspector under sub-rule (1) and holding gazetted rank, may serve an order in the form set out in Annexure IX, upon any supplier, consumer, owner or occupier, calling upon him to comply with any specified rule and the person so served shall thereupon comply with the order within the period named therein, and shall report in writing to the Inspector when the order is complied with:

Provided that, if within the period specified in the aforesaid order an appeal is filed against the order, the appellate authority may suspend its operation pending the decision of the appeal.

**6. Appeals.**—(1) An appeal against an order served under sub-rule (4) of rule 5 shall lie—

(a) if the order is served by an officer appointed to assist an Inspector, to the Inspector;

(b) if the order is served by an Inspector, to the Central Government or the State Government, as the case may be.

(2) In the case of an order of an Inspector on an appeal preferred to him under clause (a) of sub-rule (1), a further appeal shall lie to the Central Government or the State Government, as the case may be.

(3) Every appeal shall be in writing, shall be accompanied by a copy of the order appealed against and shall be presented within three months of the date of the service of such order.

**7. Amount of fees.**—(1) The fees set out in Annexure II shall be payable in respect of the services therein mentioned where the tests are carried out by comparison with the Government of India Standards referred to in sub-rule (1) of rule 2.

(2) The Central Government or the State Government, as the case may be, may levy such fees for testing and inspection and generally for the services of Inspectors as it may from time to time by general or special order, direct; and may, if it thinks fit, remit any fee or any portion thereof.

**8. Incidence of fees recoverable in the cases of dispute.**—Where an Inspector is called in to decide any difference or dispute and where a fee for such service is recoverable, the Inspector shall decide by whom such fee shall be payable.

**9. Submission of records.**—An Inspector may require a supplier or an owner to submit to him for examination any records of tests made in connection with his work and he shall comply with such requisition. Similarly, a supplier or an owner may require the Inspector to submit to him for examination any records of tests made by the Inspector in connection with his works and the Inspector shall comply with such requisition.

**10. List of consumers.**—An Inspector may require a supplier to submit to him a list of all persons supplied with energy by him and of the addresses at which such energy is supplied and the supplier shall comply with such requisition.

## CHAPTER III

## LICENCE

**11. Application for licence.**—(1) Every application for a licence shall be signed by or on behalf of the applicant and addressed to such officer as the State Government may designate in this behalf and it shall be accompanied by—

- (a) six copies, in print, of the draft licence as proposed by the applicant, with the name and address of the applicant and of his agent (if any), printed on the outside of the draft;
- (b) three copies, each signed by the applicant, of maps of the proposed area of supply and of the streets or roads in which the supply of energy is to be compulsory, which shall be so marked or coloured as to define any portion of such area and streets or roads which are under the administrative control of any local authority and shall be on a scale—
  - (i) of not less than six inches to a mile, or
  - (ii) if no such maps are available, of not less than that of the largest scale ordnance maps available, or
  - (iii) on such other scales as may be approved by the State Government;
- (c) a list of any local authorities invested with the administration of any portion of the area of supply;
- (d) an approximate statement describing any lands which the applicant proposes to acquire for the purpose of the licence under the provisions of the Land Acquisition Act, 1894 (I of 1894);
- (e) an approximate statement of the capital proposed to be expended in connection with the undertaking and such other particulars as the State Government may require;
- (f) if the applicant is a Company which is registered under any of the enactments relating to Companies for the time being in force in India or is a Corporation by an Act of the Parliament, a copy of the Memorandum and Articles of Association; and
- (g) a treasury receipt for such fee not exceeding fifteen hundred rupees, as the State Government may require, paid into a Government treasury in the state concerned, unless such fee is remitted, wholly or in part, by general or special order of the State Government.

(2) If the application for a licence is rejected or if a licence is revoked under sub-section (3) of section 4 as to the whole or any part of the area of supply, the State Government may at its discretion refund, wholly or in part, the fee referred to in clause (g) of sub-rule (1).

**12. Copies of maps and draft licence for public inspection.**—The applicant shall deposit at his own office and of his agents (if any) and at the office of every local authority invested with the administration of any portion of the proposed area of supply—

- (a) copies of the maps referred to in clause (b) of sub-rule (1) of rule 11 for public inspection; and
- (b) a sufficient number of copies of the draft licence to be furnished to all persons applying for them at a price not exceeding four annas per copy.

**13. Contents of draft licence.**—The draft licence shall contain the following particulars:—

- (a) A short title descriptive of the proposed undertaking together with the address and description of the applicant, or in the case of a firm, the names of all the directors or partners of the firm;
- (b) A statement of the boundaries of the proposed area of supply;
- (c) If the generating station is situated or is to be situated outside the area of supply or if any intervening area not included in the area of supply is to be crossed, a list of the streets not included in the area of supply along or across which electric supply-lines are to be laid down or placed;

- (d) The proposed limits within which and the conditions under which the supply of energy is to be compulsory or permissive, the nature and amount of the supply (if limited) and the like;
- (e) A list of the streets (if any) which are repairable neither by the Central or the State Government nor by a local authority and of the railways and tramways (if any) the soil or pavement of which the applicant seeks powers to open or break up, and the names of the persons or designations of authorities by whom such streets are repairable or who are for the time being entitled to work such railways or tramways;
- (f) The proposed periods after which the right to purchase is to take effect;
- (g) A statement of any special terms of purchase or orders proposed to be made under section 10; and
- (h) Any proposed modification of the Schedule to the Act to be made under clause (f) of sub-section (2) of Section 3.

14. **Form of draft licence.**—The form of draft licence contained in Annexure III may, with such variation as the circumstances of each case require, be used for the purposes of rules 11 and 13 and if used, shall be sufficient.

15. **Advertisement of application and contents thereof.**—(1) The applicant shall, within fourteen days from the submission of the application under rule 11, publish notice of his application by public advertisement, and such advertisement shall publish such particulars as the State Government may specify.

(2) The advertisement shall be headed by a short title corresponding to that given at the head of the draft licence and shall give the addresses of the offices at which, under rule 12, copies of maps therein referred to may be inspected and the copies of draft licence perused or purchased and shall state that every local authority, company or person, desirous of making any representation with reference to the application to the State Government, may do so by letter addressed to such officer as the State Government may designate in this behalf, within three months of the date of issue of the first advertisement.

(3) The advertisement shall be inserted by the applicant in at least two successive issues of such newspaper as the State Government, having regard to its circulation among persons likely to be interested, may direct, and in the absence of any such direction, in at least two successive issues of any newspaper published within the proposed area of supply or if there is no such newspaper, in any newspaper published within the State.

(4) The applicant shall send a copy of each of the two successive issues of the newspaper containing the advertisement to such officer as the State Government may designate in this behalf as soon as the second issue has appeared and the State Government shall, publish the advertisement at least once in the official Gazette within six weeks from the date of the first advertisement published under sub-rule (3):

Provided that, any failure or delay on the part of the State Government in publishing the advertisement shall not of itself preclude the grant of a licence.

16. **Amendment of draft licence.**—Any person who desires to have any amendment made in the draft licence shall deliver a statement of the amendment to the applicant and to such officer as the State Government may designate in this behalf within the time allowed under sub-rule (2) of rule 15 for the submission of representations referring to the application.

17. **Local inquiries.**—If any person locally interested objects to the grant of a licence applied for under the Act, the State Government shall, if either the applicant or the objector so desires, cause a local inquiry to be held of which the notice in writing shall be given to both the applicant and the objector:

Provided that, the State Government may refuse such an inquiry if in its opinion the objection is of a trifling or vexatious nature.

18. **Approval of draft licence.**—When the State Government has approved a draft licence, either in its original form or in a modified form, such officer as the State Government may designate in this behalf shall inform the applicant of such approval and of the form in which it is proposed to grant the licence.

**19. Notification of grant of licence.**—On receiving an intimation in writing from the applicant that he is willing to accept a licence in the form approved by the State Government, the State Government shall publish the licence within two months by a notification in the official Gazette, together with a statement that it has been granted.

**20. Date of commencement of licence.**—The date of a notification under rule 19 shall be deemed to be the date of commencement of the licence.

**21. Deposit of maps.**—When a licence has been granted, three sets of maps showing, as regards such licence, the particulars specified in clause (b) of sub-rule (1) of rule 11 shall be signed and dated to correspond with the date of the notification of the grant of the licence by such officer as the State Government may designate in this behalf. One set of such maps shall be retained as the deposited maps by the said officer and of the remaining two sets, one shall be furnished to the State Electricity Board constituted under section 5 of the Electricity (Supply) Act, 1948 and the other to the licensee.

**22. Deposit of printed copies.**—(1) Every person who is granted a licence, shall within thirty days of the grant thereof—

- (a) have adequate number of copies of the licence printed;
- (b) have adequate number of maps prepared showing the area of supply and the compulsory areas specified in the licence;
- (c) arrange to exhibit a copy of such licence and maps for public inspection at all reasonable times at his head office, his local offices (if any), and at the office of every local authority within the area of supply.

(2) Every such licensee shall, within the aforesaid period of thirty days supply free of charge one copy of the licence and the relevant maps to every local authority within the area of supply and shall also make necessary arrangements for the sale of printed copies of the licence to all persons applying for the same, at a price not exceeding annas four per copy.

**23. Application for written consent of State Government in certain cases.**—If a licensee desires the written consent of the State Government under sub-section (5) of Section 12 to enable him to open or break up the soil or pavement of any street (which is repairable neither by the Central or the State Government nor by a local authority), or any railway or tramway, he shall apply for such consent in writing to such officer as the State Government may designate in this behalf and shall describe accurately the street, railway, or tramway, which he seeks power to open or break up and the names of the persons or designations of the authorities by whom such street is repairable or who are for the time being entitled to work such railway or tramway; and the extent to which he proposes to open or break up the same.

**24. Amendment of licence.**—(1) If a licensee desires that any alterations or amendments should be made in the terms and conditions of his licence under clause (b) of sub-section (3) of Section 4, he shall submit a written application to the officer designated by the State Government under rule 11 and shall within fourteen days from the submission of the application publish notice of his application by public advertisement; and the provisions of sub-rules (2), (3) and (4) of rule 15 shall apply to such publication.

(2) The State Government shall within six months of the date of submission of the application, either approve of the alterations or amendments in the form proposed by the licensee or in any other modified form which he accepts or rejects them. When the State Government has approved of the alterations or amendments either in the form proposed by the licensee or in any other modified form which he accepts, it shall notify the alterations or amendments so approved, in the official Gazette.

**25. Sale of Plans.**—Copies of plans or sections such as are referred to in clause XVI of the Schedule to the Act shall be supplied by the licensee to every applicant at a price not exceeding one rupee per square foot.

**26. Preparation and submission of accounts.**—(1) Every licensee, unless exempted under section 11, shall cause the accounts of his undertaking to be made up to the thirty-first day of March each year.

(2) Such licensee shall prepare and render an annual statement of his accounts in accordance with the provisions of section 11 within a period of six months from the aforesaid date, or such extended period as the State Government may authorize after it is satisfied that the time allowed is insufficient owing to any cause beyond the control of the licensee; and the statement shall be rendered in quadruplicate if the State Government so desires.



(3) The accounts shall be made up in the prescribed forms set out in Annexures IV and V and shall be rendered in Indian currency,

(4) The State Government may, by special or general order, direct that in addition to the submission of the annual statements of accounts in the forms prescribed in sub-rule (3), a licensee, shall submit to the State Government or such other authority as it may appoint in this behalf such additional information as it may require for the purpose.

**27. Model conditions of supply.**—Without prejudice to the powers conferred by section 21 on the State Government in this behalf, the model conditions of supply contained in Annexure VI may, with such variations as the circumstances of each case require, be adopted by the licensee for the purpose of sub-section (2) of that section with the previous sanction of the State Government,

**28. Forms of requisitions.**—Requisitions under sub-clause (4), of clause V or sub-clause (5) of clause VI as the case may be, of the Schedule to the Act shall be made in the form set out in Annexure VII or Annexure VIII.

## CHAPTER IV

### GENERAL SAFETY PRECAUTIONS

**29. Construction, installation, protection, operation and maintenance of electric supply lines and apparatus.**—All electric supply lines and apparatus shall be sufficient in power and size and of sufficient mechanical strength for the work they may be required to do, and, so far as is practicable, shall be constructed, installed, protected, worked and maintained in accordance with the standards of the Indian Standards Institution so as to prevent danger.

**30. Service lines and apparatus on consumer's premises.**—(1) The supplier shall ensure that all electric supply lines, wires, fittings, and apparatus belonging to him or under his control which are on a consumer's premises are in a safe condition and in all respects fit for supplying energy, and the supplier shall take due precautions to avoid danger arising on such premises from such supply lines, wires, fittings and apparatus.

(2) Service-lines placed by the supplier on the premises of a consumer which are underground or which are accessible shall be so insulated and protected by the supplier as to be secure under all ordinary conditions against electrical, mechanical, chemical or other injury to the insulation.

(3) The consumer shall, as far as circumstances permit, take precautions for the safe custody of the equipment on his premises belonging to the supplier.

(4) The consumer shall also ensure that the installation under his control is maintained in a safe condition.

**31. Cut-out on consumer's premises.**—(1) The supplier shall provide a suitable cut-out in each conductor of every service-line other than an earthed or earthed neutral conductor or the earthed external conductor of a concentric cable within a consumer's premises, in an accessible position. Such cut-out shall be contained within an adequately enclosed fire-proof receptacle.

Where more than one consumer is supplied through a common service-line, each such consumer shall be provided with an independent cut-out at the point of junction to the common service.

(2) The owner of every electric supply line, other than the earthed or earthed neutral conductor of any system or the earthed external conductor of a concentric cable, shall protect it by a suitable cut-out.

**32. Identification of earthed and earthed neutral conductors and position of switches and cut-outs therein.**—Where the conductors include an earthed conductor of a two-wire system or an earthed neutral conductor of a multi-wire system or a conductor which is to be connected thereto, the following conditions shall be complied with:—

- (1) An indication of a permanent nature shall be provided by the owner of the earthed or earthed neutral conductor, or the conductor which is to be connected thereto, to enable such conductor to be distinguished from any live conductor. Such indication shall be provided—

- (a) where the earthed or earthed neutral conductor is the property of the supplier, at or near the point of commencement of supply;
  - (b) where a conductor forming part of a consumer's system is to be connected to the supplier's earthed or earthed neutral conductor, at the point where such connection is to be made;
  - (c) in all other cases, at a point corresponding to the point of commencement of supply or at such other point as may be approved by an Inspector.
- (2) No cut-out, link or switch other than a linked switch arranged to operate simultaneously on the earthed or earthed neutral conductor and live conductors shall be inserted or remain inserted in any earthed or earthed neutral conductor of a two-wire system or in any earthed or earthed neutral conductor of a multi-wire system or in any conductor connected thereto with the following exceptions:—
- (a) A link for testing purposes, or
  - (b) A switch for use in controlling a generator or transformer.

**33. Earthed terminal on consumer's premises.**—(1) The supplier shall provide and maintain on the consumer's premises for the consumer's use a suitable earthed terminal in an accessible position at or near the point of commencement of supply as defined under rule 58;

Provided that in the case of medium, high or extra high voltage installation, the consumer shall, in addition to the afore-mentioned earthing arrangement, provide his own earthing system with an independent electrode;

Provided further that the supplier may not provide any earthed terminal in the case of installations already connected to his system on or before the date to be specified by the State Government in this behalf if he is satisfied that the consumer's earthing arrangement is efficient.

(2) The consumer shall take all reasonable precautions to prevent mechanical damage to the earthed terminal and its lead belonging to the supplier.

(3) The supplier may recover from the consumer the cost of installation of such earthed terminal on the basis laid down in sub-rule (4) of rule 82.

**34. Accessibility of bare conductors.**—Where bare conductors are used in a building, the owner of such conductors shall—

- (a) ensure that they are inaccessible;
- (b) provide in readily accessible position switches for rendering them dead whenever necessary; and
- (c) take such other safety measures as are considered necessary by the Inspector.

**35. Caution notices.**—The owner of every medium, high and extra-high voltage installation shall affix permanently in a conspicuous position a caution notice in Hindi and the local language of the district, and of a type approved by the Inspector on—

- (a) every motor, generator, transformer and other electrical plant and equipment together with apparatus used for controlling or regulating the same;
- (b) all supports of high and extra-high voltage overhead lines;
- (c) luminous tube sign requiring high voltage supply, X-ray and similar high-frequency installations;

Provided that where it is not possible to affix such notices on any generator, motor, transformer or other apparatus, they shall be affixed as near as possible thereto;

Provided further that where the generator, motor, transformer or other apparatus is within an enclosure, one notice affixed to the said enclosure shall be sufficient for the purposes of this rule.

**36. Handling of electric supply lines and apparatus.**—(1) Before any conductor or apparatus is handled adequate precautions shall be taken, by earthing or other suitable means, to discharge electrically such conductor or apparatus, and any adjacent conductor or apparatus if there is danger therefrom, and to prevent

any conductor or apparatus from being accidentally or inadvertently electrically charged when persons are working thereon;

Provided that this sub-rule shall not apply to the cleaning of commutators and slip-rings working at low or medium voltage.

(2) No person shall work on any live electric supply line or apparatus and no person shall assist such person on such work, unless he is authorized in that behalf, and takes the safety measures approved by the Inspector.

(3) Every telecommunication line on supports carrying a high or extra-high voltage line shall, for the purpose of working thereon, be deemed to be a high voltage line.

**37. Supply to vehicles, cranes, etc.**—Every person owning a vehicle, travelling crane or the like to which energy is supplied from an external source shall ensure that it is efficiently controlled by a suitable switch enabling all voltage to be cut off in one operation and, where such vehicle, travelling crane or the like runs on metal rails, the owner shall ensure that the rails are electrically continuous and earthed.

**38. Cables for portable or transportable apparatus.**—(1) Flexible cables shall not be used for portable or transportable motors, generators, transformers, rectifiers, electric drills, electric sprays, welding sets or any other portable or transportable apparatus unless they are heavily insulated and adequately protected from mechanical injury.

(2) Where the protection is by means of metallic covering, the covering shall be in metallic connection with the frame of any such apparatus and earth.

**39. Cable protected by bituminous materials.**—(a) where the supplier or the owner has brought into use an electric supply line (other than an overhead line) which is not completely enclosed in a continuous metallic covering connected with earth and is insulated or protected *in situ* by composition or material of a bituminous character—

(i) any pipe, conduit or the like into which such electric supply line may, have been drawn or placed shall, unless other arrangements are approved by the Inspector in any particular case, be effectively sealed at its point of entry into any street box so as to prevent any flow of gas to or from the street box; and

(ii) such electric supply line shall be periodically inspected and tested where accessible, and the result of each such inspection and test shall be duly recorded by the supplier or the owner.

(b) It shall not be permissible for the supplier or the owner after the coming into force of these rules, to bring into use any further electric supply line as aforesaid which is insulated or protected *in situ* by any composition or material known to be liable to produce noxious or explosive gases on excessive heating.

**40. Street boxes.**—(1) Street boxes shall not contain gas pipes, and precautions shall be taken to prevent, as far as reasonably possible, any influx of water or gas.

(2) Where electric supply lines forming part of different systems pass through the same street box they shall be readily distinguishable from one another and all electric supply lines at high or extra high voltage in street boxes shall be adequately supported and protected so as to prevent risk of damage to or danger from adjacent electric supply lines.

(3) All street boxes shall be regularly inspected for the purpose of detecting the presence of gas and if any influx or accumulation is discovered, the owner shall give immediate notice to any authority or company who have gas mains in the neighbourhood of the street box and in cases where a street box is large enough to admit the entrance of a person after the electric supply lines or apparatus therein have been placed in position, ample provision shall be made—

(a) to ensure that any gas which may by accident have obtained access to the box shall escape before a person is allowed to enter, and

(b) for the prevention of danger from sparking.

(4) The owners of all street boxes or pillars containing circuits or apparatus shall ensure that their covers and doors are so provided that they can be opened only by means of a key or a special appliance.

**41. Distinction of circuits of different voltages.**—The owner of every generating station, sub-station, junction-box or pillar in which there are any circuits or apparatus, intended for operation at different voltages, shall ensure by means of indication of a permanent nature that the respective circuits are readily distinguishable from one another.

**42. Accidental charge.**—The owners of all circuits and apparatus shall so arrange them that there shall be no danger of any part thereof becoming accidentally charged to any voltage beyond the limits of voltage for which they are intended.

Where A.C. and D.C. circuits are installed on the same support they shall be so arranged and protected that they shall not come into contact with each other when live.

**43. Provisions applicable to protective equipment.**—(1) Fire buckets filled with clean dry sand and ready for immediate use for extinguishing fires, in addition to fire extinguishers suitable for dealing with electric fires, shall be conspicuously marked and kept in all generating stations, enclosed sub-stations and enclosed switch stations in convenient situations.

(2) First-aid boxes or cupboards, conspicuously marked and equipped with such contents as the State Government may specify, shall be provided and maintained in every generating station, enclosed sub-station and enclosed switch station so as to be readily accessible during all working hours. All such boxes and cupboards shall, except in the case of unattended sub-stations and switch stations be kept in charge of responsible persons who are trained in first-aid treatment and one of such persons shall be available during working hours.

**44. Instructions for restoration of persons suffering from electric shock.**—(1) Instructions, in English, Hindi and the local language of the district, for the restoration of persons suffering from electric shock, shall be affixed by the owner in a conspicuous place in every generating station, enclosed sub-station, enclosed switch-station and in every factory as defined in clause (m) of section 2 of the Factories Act, 1948 (LXIII of 1948) in which electricity is used and in such other premises where electricity is used as the Inspector may, by notice in writing served on the owner, direct.

(2) Copies of the instructions shall be supplied on demand by an officer or officers appointed by the Central or the State Government in this behalf at a price to be fixed by the Central or the State Government.

(3) The owner of every generating station, enclosed sub-station, enclosed switch-station, and every factory or other premises to which this rule applies shall ensure that all authorized persons employed by him are acquainted with and are competent to apply the instructions referred to in sub-rule (1).

**45. Precautions to be adopted by consumers, owners, electrical contractors, electrical workmen and suppliers.**—(1) No electrical installation work, including additions, alterations, repairs and adjustments to existing installations, except such replacement of lamps, fans, fuses, switches, low voltage domestic appliances and fittings as in no way alters its capacity or character, shall be carried out upon the premises of or on behalf of any consumer or owner, for the purpose of supply to such consumer or owner, except by an electrical contractor licensed in this behalf by the State Government and under the direct supervision of a person holding a certificate of competency issued or recognised by the State Government;

Provided that in the case of works executed for or on behalf of the Central Government and in the case of installations in mines, oil fields and railways, the Central Government and in other cases the State Government may, by notification in the official Gazette, exempt, on such conditions as it may impose, any such work described therein either generally or in the case of any specified class of consumers or owners, from so much of this sub-rule as requires such work to be carried out by an electrical contractor licensed by the State Government in this behalf.

(2) No electrical installation work which has been carried out in contravention of sub-rule (1) shall be connected with the works of any supplier.

(3) The provisions of sub-rule (1) shall come into force in any oil field, mine or railway or any State or part thereof on such date as the Central or, as the case may be, the State Government may, by notification in the official Gazette, appoint.

**46. Periodical inspection and testing of consumer's installation.**—(1) (a) where an installation is already connected to the supply system of the supplier, every such installation shall be periodically inspected and tested at intervals not exceeding five years either by the Inspector or by the suppliers as may be directed by the State Government in this behalf or in the case of installations in mines, oil-fields and railways, by the Central Government.

(b) Where the supplier is directed by the Central or the State Government, as the case may be, to inspect and test the installation, he shall report on the condition of the installation to the consumer concerned in a form approved by the Inspector and shall submit a copy of such report to the Inspector.

(2) (a) The fees for such inspection and test shall be determined by the Central or the State Government, as the case may be, in the case of each class of consumers and shall be payable by the consumer in advance.

(b) In the event of the failure of any consumer to pay the fees on or before the date specified in the fee-notice, supply to the installation of such consumer shall be liable to be disconnected under the direction of the Inspector. Such disconnection, however, shall not be made by the supplier without giving to the consumer seven clear days' notice in writing of his intention so to do.

(3) Notwithstanding the provisions of this rule, the consumer shall at all times be solely responsible for the maintenance of his installation in such condition as to be free from danger.

## CHAPTER V

### GENERAL CONDITIONS RELATING TO SUPPLY AND USE OF ENERGY

**47. Testing of consumer's installation.**—(1) Upon receipt of an application for a new or additional supply of energy and before connecting the supply or reconnecting the same after a period of six months, the supplier shall inspect and test the applicant's installation.

The supplier shall maintain a record of test results obtained at each supply point to a consumer, in a form to be approved by the Inspector.

(2) If as a result of such inspection and test, the supplier is satisfied that the installation is likely to constitute danger, he shall serve on the applicant a notice in writing requiring him to make such modifications as are necessary to render the installation safe. The supplier may refuse to connect or reconnect the supply until the required modifications have been completed and he has been notified by the applicant.

**48. Precautions against leakage before connection.**—(1) The supplier shall not connect with his works the installation or apparatus on the premises of any applicant for supply unless he is reasonably satisfied that the connection will not, at the time of making the connection, cause a leakage from that installation or apparatus exceeding one five thousandth part of the maximum current supplied to the applicant's premises.

(2) If the supplier declines to make a connection under the provisions of sub-rule (1), he shall serve upon the applicant a notice in writing stating his reason for so declining.

**49. Leakage on consumer's premises.**—(1) If the Inspector or the supplier has reason to believe that there is in the system of a consumer leakage which is likely to affect injuriously the use of energy by the stipplier or by other persons, or which is likely to cause danger, he may give the consumer reasonable notice in writing that he desires to inspect and test the consumer's installation.

(2) If, on such notice being given—

(a) the consumer does not give all reasonable facilities for inspection and testing of his installation, or

(b) a leakage exceeding one five-thousandth part or the maximum current supplied to the consumer's installation is shown to exist,

the supplier may, and if directed so to do by the Inspector, shall, discontinue the supply of energy to the installation but only after giving to the consumer forty-eight hours' notice in writing of disconnection of supply and shall not recommence the supply until he or the Inspector is satisfied that the cause of the leakage has been removed.

**50. Supply to consumers.**—(1) The supplier shall not commence or continue to give supply to any consumer unless—

(a) a suitable linked switch or a circuit-breaker of requisite capacity to carry and break the current is placed as near as possible to, but after the point of commencement of supply as defined under rule 58, so as to be readily accessible and capable of being easily operated to completely isolate the supply to the installation, such equipment being in addition to any equipment installed for controlling individual circuits or apparatus;

Provided that where the point of commencement of supply and the consumer's apparatus are near each other, one linked switch or circuit-breaker near the point of commencement of supply shall be considered sufficient for the purpose of this rule;

(b) a suitable linked switch or a circuit-breaker of requisite capacity to carry and break the full load current is inserted on the secondary side of a transformer, in the case of high or extra-high voltage installation. Provided, however, that the linked switch on the primary side of the transformer may be of such capacity as to carry the full load current and to break only the magnetising current of the transformer;

Provided further that the provision of this clause shall not apply to transformers installed in sub-stations upto and including 100 KVA belonging to the supplier;

(c) every distinct circuit is protected against excess energy by means of a suitable cut-out or a circuit breaker of adequate breaking capacity suitably located and so constructed as to prevent danger from over-heating, arcing or scattering of hot metal when it comes into operation and to permit of ready renewal of the fusible metal of the cut-out without danger;

(d) the supply of energy to each motor or other apparatus is controlled by a suitable linked switch or a circuit-breaker of requisite capacity placed in such a position as to be adjacent to the motor or other apparatus readily accessible to and easily operated by the person in charge and so connected in circuit that by its means all supply of energy can be cut off from the motor or apparatus, and from any regulating switch, resistance or other device associated therewith;

(e) all insulating material is chosen with special regard to the circumstances of its proposed use, the mechanical strength being sufficient for its purpose, and so far as is practicable, is of such a character or so protected as to maintain adequately its insulating properties under all working conditions in respect of temperature and moisture; and

(f) adequate precautions are taken to ensure that no live parts are so exposed as to cause danger.

(2) Every consumer or other user of energy shall so maintain his installation as to conform at all times to the provisions of sub-rule (1), and shall use all reasonable means in his power to ensure that, where energy is supplied by a supplier, no person other than the supplier shall interfere with the service-lines and apparatus placed by the supplier on his premises.

**51. Provisions applicable to medium, high or extra high voltage installations.**—The following provisions shall be observed where energy at medium, high or extra-high voltage is supplied, converted, transformed or used:—

(1) (a) All conductors (other than those of overhead lines) shall be completely enclosed in mechanically strong metal casing or metallic covering which is electrically and mechanically continuous and adequately protected against mechanical damage, unless the said conductors are accessible only to an authorized person, or are installed and protected to the satisfaction of the Inspector so as to prevent danger.

(b) All metal work enclosing, supporting or associated with the installation, other than that designed to serve as a conductor shall, if considered necessary by the Inspector be connected with earth.

(c) Every main switchboard shall comply with the following provisions namely:—

(i) a clear space of not less than 3 feet in width shall be provided in front of the switchboard;

- (ii) if there are any attachments or bare connections at the back of the switchboard, the space (if any) behind the switchboard shall be either less than 9 inches, or more than 30 inches in width, measured from the furthest outstanding part of any attachment or conductor,
- (iii) if the space behind the switchboard exceeds 30 inches in width, there shall be a passage-way from either end of the switchboard clear to a height of 6 feet

(2) Where an application has been made to a supplier for supply of energy to any installation, he shall not commence or where the supply has been discontinued, recommence the supply unless he is satisfied that the consumer has complied in all respects with the conditions of supply set out in sub-rule (1) of this rule, rules 50 and 64

(3) Where a supplier proposes to supply or use energy at medium voltage or to recommence supply after it has been discontinued for a period of six months, he shall, before, connecting or reconnecting the supply, give notice in writing of such intention to the Inspector

(4) If at any time after connecting the supply the supplier is satisfied that any provision of sub-rule (1) of this rule, or of rules 50 and 64 is not being observed he shall give notice of the same in writing to the consumer and the Inspector specifying how the provision has not been observed, and may discontinue the supply if the Inspector so directs

**52 Appeal to Inspector in regard to defects.**—(1) If any applicant for a supply or a consumer is dissatisfied with the action of the supplier in declining to commence, to continue or to recommence the supply of energy to his premises on the grounds that the installation is defective or is likely to constitute danger, he may appeal to the Inspector to test the installation and the supplier shall not, if the Inspector or, under his orders, any other officer appointed to assist the Inspector, is satisfied that the installation is free from the defect or danger complained of be entitled to refuse supply to the consumer on the grounds aforesaid, and shall, within twenty-four hours after the receipt of such intimation from the Inspector, commence, continue or recommence the supply of energy

(2) Any test for which application has been made under the provision of sub-rule (1) shall be carried out within seven days after the receipt of such application

(3) This rule shall be endorsed on every notice given under the provisions of rules 47, 48 and 49

**53. Cost of inspection and test of consumer's installation.**—(1) The cost of the first inspection and test of a consumer's installation carried out in pursuance of the provisions of rule 47 shall be borne by the supplier and the cost of every subsequent inspection and test shall be borne by the consumer, unless in the appeal under rule 52, the Inspector directs otherwise

(2) The cost of any inspection and test made by the Inspector at the request of the consumer or other interested party, shall be borne by the consumer or other interested party, unless the Inspector directs otherwise

(3) The cost of each and every such inspection and test by whomsoever borne shall be calculated in accordance with the scale specified by the Central or the State Government as the case may be in this behalf

**54 Declared voltage of supply to consumer**—Except with the written consent of the consumer or with the previous sanction of the State Government a supplier shall not permit the voltage at the point of commencement of supply as defined under rule 58 to vary from the declared voltage by more than 5 per cent in the case of low or medium voltage or by more than  $12\frac{1}{2}$  per cent in the case of high or extra-high voltage

**55 Declared frequency of supply to consumer.**—Except with the written consent of the consumer or with the previous sanction of the State Government a supplier shall not permit the frequency of an alternating current supply to vary from the declared frequency by more than 3 per cent

**56 Sealing of meters and cut-outs.**—(1) A supplier may affix one or more seals to any cut-out and to any meter, maximum demand indicator, or other

apparatus placed upon a consumer's premises in accordance with section 26, and no person other than the supplier shall break any such seal.

(2) The consumer shall use all reasonable means in his power to ensure that no such seal is broken otherwise than by the supplier.

(3) The word 'supplier' shall for the purpose of this rule include a State Government when any meter, maximum demand indicator or other apparatus is placed upon a consumer's premises by such Government.

**57. Meters, maximum demand indicators and other apparatus on consumer's premises.**—(1) Any meter or maximum demand indicator or other apparatus placed upon a consumer's premises in accordance with section 26 shall be of appropriate capacity and shall be deemed to be correct if its limits of error do not exceed 3 per cent. above or below absolute accuracy at all loads in excess of one-tenth of full load and up to full load.

(2) No meter shall register at no load.

(3) Every supplier shall provide and maintain in proper condition such suitable apparatus as may be prescribed or approved by the Inspector for the examination, testing and regulation of meters used or intended to be used in connection with the supply of energy:

Provided that the supplier may with the approval of the Inspector and shall, if required by the Inspector cater into a joint arrangement with any other supplier for the purpose aforesaid.

(4) Every supplier shall examine, test and regulate all meters, maximum demand indicators and other apparatus for ascertaining the amount of energy supplied before their first installation at the consumers' premises and at such other intervals as may be directed by the State Government in this behalf.

(5) Every supplier shall maintain a register of meters showing the date of the last test, the error recorded at the time of the test, the limit of accuracy after adjustment and final test, the date of installation, withdrawal, reinstallation, etc., for the examination of the Inspector or his authorized representative.

**58. Point of commencement of supply.**—The point of commencement of supply of energy to a consumer shall be deemed to be the point at the outgoing terminals of the cut-outs inserted by the supplier in each conductor of every service line other than an earthed or earthed neutral conductor or the earthed external conductor of a concentric cable at the consumer's premises.

**59. Precautions against failures of supply: Notice of failures.**—(1) The lay-out of the electric supply lines of the supplier for the supply of energy throughout his area of supply shall under normal working conditions be sectionalised and so arranged, and provided with cut-outs or circuit-breakers so located, as to restrict within reasonable limits the extent of the portion of the system affected by any failure of supply.

(2) The supplier shall take all reasonable precautions to avoid any accidental interruptions of supply, and also to avoid danger to the public or to any employee or authorized person when engaged on any operation during and in connection with the installation, extension, replacement, repair and maintenance of any work.

(3) The supplier shall send to the Inspector notice of failure of supply of such kind as the Inspector may from time to time require to be notified to him, and such notice shall be sent by the earliest practicable post after the failure occurs or after the failure becomes known to the supplier and shall be in such form and contain such particulars as the Inspector may from time to time specify.

(4) For the purposes of testing or for any other purposes connected with the efficient working of the undertaking, the supply of energy may be discontinued by the supplier for such period as may be necessary subject (except in cases of emergency) to not less than twenty-four hours' notice being given by the supplier to all classes of consumers specified by the Inspector likely to be affected by such discontinuance; and in the event of any consumer or consumers from such classes of consumers objecting, the supply of energy shall not be discontinued (except in cases of emergency), without the consent of the Inspector and subject to such conditions as he may impose.



CHAPTER VI

ELECTRIC SUPPLY LINES, SYSTEMS AND APPARATUS FOR LOW AND MEDIUM VOLTAGE

60. **Test for resistance of insulation.**—(1) Where any electric supply line for use at low or medium voltage has been disconnected from a system for the purpose of addition or alteration or repair, such electric supply line shall not be reconnected to the system until the supplier or the owner has applied the test prescribed under rule 48.

(2) The provisions of sub-rule (1) shall not apply to overhead lines except overhead insulated cables unless the Inspector otherwise directs in any particular case.

61. **Connection with earth.**—(1) The following provisions shall apply to the connection with earth of systems at low voltage in cases where the voltage normally exceeds 125 volts and of systems at medium voltage:—

- (a) The neutral conductor of a three-phase four-wire system, and the middle conductor of a two-phase three-wire system shall be earthed by not less than two separate and distinct connections with earth both at the generating station and at the sub-station. It may also be earthed at one or more points along the distribution system or service line in addition to any connection with earth which may be at the consumer's premises.
- (b) In the case of a system comprising electric supply lines having concentric cables, the external conductor of such cables shall be earthed by two separate and distinct connections with earth.
- (c) The connection with earth may include a link by means of which the connection may be temporarily interrupted for the purpose of testing or for locating a fault.
- (d) (i) In a direct current three-wire system the middle conductor shall be earthed at the generating station only, and the current from the middle conductor to earth shall be continuously recorded by means of a recording ammeter, and if at any time the current exceeds one-thousandth part of the maximum supply-current, immediate steps shall be taken to improve the insulation of the system.
- (ii) Where the middle conductor is earthed by means of a circuit-breaker with a resistance connected in parallel, the resistance shall not exceed 10 ohms and on the opening of the circuit-breaker, immediate steps shall be taken to improve the insulation of the system, and the circuit-breaker shall be reclosed as soon as possible.
- (iii) The resistance shall be used only as a protection for the ammeter in case of earths on the system and until such earths are removed. Immediate steps shall be taken to locate and remove the earth.
- (e) In the case of an alternating current system, there shall not be inserted in the connection with earth any impedance (other than that required solely for the operation of switch-gear or instruments), cut-out or circuit-breaker, and the result of any test, made to ascertain whether the current (if any) passing through the connection with earth is normal, shall be duly recorded by the supplier.
- (f) No person shall make connection with earth by the aid of, nor shall he keep it in contact with, any water main not belonging to him except with the consent of the owner thereof and of the Inspector.
- (g) Alternating current systems which are connected with earth as aforesaid may be electrically interconnected:

Provided that each connection with earth is bonded to the metal sheathing and metallic armouring (if any) of the electric supply lines concerned.

(2) The frame of every generator, stationary motor, and so far as is practicable, portable motor, and the metallic parts (not intended as conductors) of all transformers and any other apparatus used for regulating or controlling energy and all medium voltage energy consuming apparatus shall be earthed by the owner by two separate and distinct connections with earth.

(3) All metal casings or metallic coverings containing or protecting any electric supply-line or apparatus shall be connected with earth and shall be so joined and connected across all junction-boxes and other openings as to make good mechanical and electrical connection throughout their whole length;

Provided that where the supply is at low voltage, this sub-rule shall not apply to isolated wall tubes or to brackets, electroliers, switches, fans, regulator, covers or other fittings (other than portable hand lamps and portable and transportable apparatus) unless provided with earth terminal.

This sub-rule shall come into force immediately in the case of new installations and in the case of existing installations the provisions of this sub-rule shall be complied with before the expiry of a period of two years from the commencement of those rules.

(4) All earthing systems shall, before electric supply lines or apparatus are energised, be tested for electrical resistance to ensure efficient earthing.

(5) All earthing systems belonging to the supplier shall, in addition, be tested for resistance on a dry day during the dry season not less than once every two years.

(6) A record of every earth test made and the result thereof shall be kept by the supplier for a period of not less than two years after the day of testing and shall be available to the Inspector when required.

**62. Systems at medium voltage.**—Where a medium voltage supply system is employed, the voltage between earth and any conductor forming part of the said system shall not, under normal conditions, exceed low voltage.

## CHAPTER VII

### ELECTRIC SUPPLY LINES, SYSTEMS AND APPARATUS FOR HIGH AND EXTRA-HIGH VOLTAGES.

**63. Approval by Inspector.**—(1) Before making an application to the Inspector for permission to commence, supply of energy at high or extra-high voltage to any person, the supplier shall ensure that the high or extra-high voltage electric supply lines or apparatus belonging to him are placed in position, properly joined and duly completed and examined. The supply of energy shall not be commenced by the supplier unless and until the Inspector is satisfied that the provisions of rules 65 to 69 both inclusive have been complied with and the approval in writing of the Inspector has been obtained by him:

Provided that the supplier may energise the aforesaid electric supply lines or apparatus for the purpose of tests specified in rule 65.

(2) The owner of any high or extra-high voltage installation shall, before making application to the Inspector for approval of his installation or additions thereto, test every high or extra-high voltage circuit or additions thereto, other than an overhead line, and satisfy himself that they withstand the application of the testing voltage set out in sub-rule (1) of rule 65 and shall duly record the results of such tests and forward them to the Inspector:

Provided that, an Inspector may direct such owner to carry out such tests as he deems necessary or if he thinks fit, accept the manufacturer's certified tests in respect of any particular apparatus in place of the tests required by this sub-rule.

(3) The owner of any high or extra-high voltage installation who makes any additions or alterations to his installation shall not connect to the supply his apparatus or electric supply lines, comprising the said alterations or additions unless and until such alterations or additions have been approved in writing by the Inspector.

**64. Use of energy at high and extra-high voltage.**—(1) The Inspector shall not authorize a supplier to connect a supply of energy at high or extra-high voltage to any consumer, unless—

(a) all conductors and apparatus intended for use at high or extra-high voltage and situated on the premises of the consumer are inaccessible except to an authorized person and all operations in connection with the said conductors and apparatus are carried out only by an authorized person;

- (b) the Consumer has provided and agrees to maintain a separate building or a locked weather-proof and fire-proof enclosure of agreed design and location, to which the supplier shall at all times have access, for the purpose of housing his high or extra-high voltage apparatus and metering equipment, or where the provision of a separate building or enclosure is impracticable, the consumer has segregated the aforesaid apparatus of the supplier from any other part of his own apparatus:

Provided that such segregation shall be by the provision of fire-proof walls, if the Inspector considers it to be necessary:

Provided further that in the case of an out-door installation the consumer shall suitably segregate the aforesaid apparatus belonging to the supplier from his own to the satisfaction of the Inspector.

- (c) all pole type sub-stations are constructed and maintained in accordance with rule 69.

(2) The following provisions shall be observed where energy at high or extra-high voltage is supplied, converted, transformed or used—

- (a) All conductors or live parts of any apparatus shall ordinarily be inaccessible.
- (b) All windings, at high or extra-high voltage of motors or other apparatus within reach from any position in which a person may require to be, shall be suitably protected so as to prevent danger.
- (c) Where transformer or transformers are used, suitable provision shall be made, either by connecting with earth a point of the circuit at the lower voltage or otherwise, to guard against danger by reason of the said circuit becoming accidentally charged above its normal voltage by leakage from or contact with the circuit at the higher voltage.
- (d) (i) Where a sub-station or a switch-station is situated in any building and where fire in the sub-station or switch-station might involve risk to the said building and the said sub-station or switch-station contains oil-immersed transformers, switches or static condensers involving the use of more than 500 gallons of oil in one chamber, provision shall be made for suitable oil soak-pit and where use of more than 2,000 gallons of oil in any one oil-tank, receptacle or chamber is involved, provision shall be made for the draining away or removal of any oil which may leak or escape from the tanks, receptacles or chambers containing the same; special precautions shall be taken to prevent the spread of any fire resulting from the ignition of the oil from any cause and adequate provision shall be made for extinguishing any fire which may occur. Spare oil shall not be stored in any such sub-station or switch station.
- (ii) Cable trenches inside sub-stations and switch stations containing cables shall be filled with sand, pebbles or similar non-inflammable materials or completely covered with non-inflammable slabs.
- (e) Unless the conditions are such that all the conductors and apparatus for use at high or extra-high voltage may be made dead at the same time for the purpose of cleaning or for other work thereon, the said conductors and apparatus shall be so arranged that they may be made dead in sections, and that work on any section made dead may be carried on by an authorized person without danger.
- (f) Adequate precautions shall be taken to prevent unauthorized access to any part of the installation designed to be electrically charged at high or extra-high voltage.

**65. Voltage tests.**—(1) High and extra-high voltage electric supply-lines (other than overhead lines) and apparatus of the supplier shall not be connected to a system for the purposes of supply or use of energy unless the insulation of the said electric supply lines and apparatus has withstood, either—

- (i) the tests prescribed in that behalf in the appropriate specification of the Indian Standards Institution or in its absence the British Standards Institution then current; or

- (ii) in cases where no such tests have been prescribed, the continuous application, between conductors and also between conductors and earth during a period of one minute of the testing voltage given in sub-rule (2).
- (2) For the purposes of clause (ii) of sub-rule (1)—
- (a) if the normal working voltage does not exceed 1,000 volts, the testing voltage shall be 2,000 volts;
  - (b) if the normal working voltage exceeds 1,000 volts, but does not exceed 11,000 volts, the testing voltage shall be double the normal working voltage;
  - (c) if the normal working voltage exceeds 11,000 volts, the testing voltage shall be normal working voltage plus 10,000 volts:

Provided that an apparatus which is not new shall be tested in such manner as the Inspector may specify.

(3) If the test prescribed in sub-rule (1) is made prior to the said electric supply lines and apparatus being placed in position for the purposes of supply of energy, the said electric supply-lines and the apparatus after having been placed in position and before being connected to the system shall have withstood a further test for resistance of insulation either by the application of the tests prescribed in sub-rule (1) whenever reasonably practicable, or by the application of a testing voltage of not less than 1,000 volts either alternating current or direct current between conductors and also between conductors and earth during a period of not less than one minute.

(4) Where any electric supply line (other than an overhead line) or apparatus for use at high or extra-high voltage has been disconnected from a system for alteration or repair, such electric supply line or apparatus shall not be reconnected to the system until the supplier has applied the test prescribed in sub-rule (3) and has satisfied himself that the insulation of the electric supply line or apparatus is in sound condition.

(5) The supplier shall duly record the result of every test made under this rule.

(6) Notwithstanding the provisions of sub-rules (1) to (4), (both inclusive) the Inspector may, where he thinks fit, accept the manufacturer's certified tests in place of the tests prescribed in this rule.

#### 66. Metal sheathed electric supply lines: Precautions against excess leakage.—

(1) The following provisions shall apply to electric supply lines (other than overhead lines of a supplier for use at high or extra-high voltage:—

- (a) The conductors shall be enclosed in metal sheathing which shall be electrically continuous and connected with earth, and the conductivity of the metal sheathing shall be maintained and reasonable precautions taken where necessary to avoid corrosion of the sheathing.
- (b) In the event of a failure of insulation occurring between one conductor and the metal sheathing at any point along an electric supply line as aforesaid, the impedance of the relevant circuit shall be such that, with the full voltage maintained at the source of supply, the current resulting from such failure shall not be less than twice the value of the current for which a suitable cut-out of adequate rupturing capacity or other suitable overload protective device has been set to operate or the current required to operate a suitable discriminative fault current relay:

Provided that the operation of the aforesaid overload protective device or of the discriminative fault current relay shall cause the automatic operation of a circuit-breaker of adequate rupturing capacity

The relevant circuit hereinbefore referred to means the complete circuit from the source of supply to the point of failure of the insulation, including any connection with earth of the system of which the electric supply-line as aforesaid forms part and any current limiting device inserted in such connection with earth; and the source of supply means the point at which energy is given to the system or circuit of which the electric supply line as aforesaid forms part.

- (c) Where an electric supply-line as aforesaid has concentric cables and the external conductor is insulated from an outer metal sheathing and connected with earth, the external conductor may be regarded as the metal sheathing for the purposes of this rule provided that, the foregoing provisions as to conductivity are complied with.

(2) Nothing in the provisions of sub-rule (1) shall preclude the employment in generating stations, sub-stations and switch stations (including outdoor sub-stations and outdoor switch-stations) of conductors for use at high or extra-high voltages which are not enclosed in metal sheathing or preclude the use of electric supply-lines laid before the prescribed date to which the provisions of these rules apply.

**67. Connection with earth.**—(1) The following provisions shall apply to the connection with earth of three-phase systems for use at high or extra-high voltages:—

In the case of star-connected systems with earthed neutrals or delta connected systems with earthed artificial neutral point:

- (a) the neutral point shall be earthed by not less than two separate and distinct connections with earth each having its own electrode at the generating station and at the sub-station and may be earthed at any other point provided that no interference of any description is caused by such earthing;

- (b) in the event of an appreciable harmonic current flowing in the neutral connection so as to cause interference with communication circuits, the generator or transformer neutral shall be earthed through a suitable impedance.

(2) Single-phase high or extra-high voltage systems shall be earthed in a manner approved by the Inspector.

(3) In the case of a system comprising electric supply-lines having concentric cables, the external conductor shall be the one to be connected with earth.

(4) Where a supplier proposes to connect with earth an existing system for use at high or extra-high voltage which has not hitherto been so connected with earth, he shall give not less than fourteen days' notice in writing together with particulars to the telegraph-authority of the proposed connection with earth.

(5) Where the earthing lead and earth connection are used only in connection with earthing guards erected under high or extra-high voltage overhead lines where they cross a telecommunication line or a railway line, and where such lines are equipped with earth leakage relays of a type and setting approved by the Inspector, the resistance shall not exceed 25 ohms.

(6) In so far as the provisions of rule 61 are consistent with the provisions of this rule, all connections with earth shall also comply with the provisions of that rule.

**68. General conditions as to transformation and control of energy.**—(1) Where energy at high or extra-high voltage is transformed, converted, regulated or otherwise controlled in sub-stations or switch-stations (including outdoor sub-stations and outdoor switch-stations) or in street boxes constructed under ground, the following provisions shall have effect:—

- (a) Sub-stations and switch-stations shall preferably be erected above ground, but where necessarily constructed under ground due provision for ventilation and drainage shall be made;

- (b) Outdoor sub-stations except pole type sub-stations and outdoor switch-stations shall (unless the apparatus is completely enclosed in a metal covering connected with earth, the said apparatus also being connected with the system by armoured cables) be efficiently protected by fencing not less than eight feet in height or other means so as to prevent access to the electric supply-lines and apparatus therein by an un-authorized person;

- (c) Underground street boxes (other than sub-stations) which contain transformers shall not contain switches or other apparatus, and switches, cut-outs or other apparatus required for controlling or other purposes shall be fixed in separate receptacles above ground wherever practicable;

(2) Where energy is transformed, suitable provisions shall be made either by connecting with earth a point of the system at the lower voltage or otherwise to guard against danger by reason of the said system becoming accidentally charged above its normal voltage by leakage from or contact with the system at the higher voltage.

**69. Pole type sub-stations.**—Where platform type construction is used for a pole type sub-station and a sufficient space for a person to stand on the platform is provided, a substantial hand rail shall be built around the said platform and if the hand rail is of metal, it shall be connected with earth:

Provided that in the case of pole type sub-station on wooden support and wooden platform the metal hand-rail shall not be connected with earth.

**70. Condensers.**—Suitable provision shall be made for immediate and automatic discharge of every static condenser on disconnection of supply.

**71. Additional provisions for supply to high voltage luminous tube sign installation.**—(1) Any person who proposes to use or who is using energy for the purpose of operating a luminous tube sign installation, or who proposes to transform or who is transforming energy to a high voltage for any such purpose shall comply with the following conditions:—

- (a) All live parts of the installation (including all apparatus and live conductors in the secondary circuit, but excluding the tubes except in the neighbourhood of their terminals) shall be inaccessible to unauthorized persons and such parts shall be effectively screened.
- (b) Irrespective of the method of obtaining the voltage of the circuit which feeds the luminous discharge tube sign, no part of any conductor of such circuit shall be in metallic connection (except in respect of its connection with earth) with any conductor of the supply system or with the primary winding of the transformer.
- (c) All live parts of an exterior installation shall be so disposed as to protect them against the effects of the weather, and such installation shall be so arranged and separated from its surroundings as to limit, as far as possible, the spreading of fire.
- (d) The secondary circuit shall be permanently earthed at the transformer and the core of every transformer shall be earthed.
- (e) Where the conductors of the primary circuit are not in metallic connection with the supply conductors (e.g., where a motor-generator or a double-wound convertor is used), one phase of such primary circuit shall be permanently earthed at the motor-generator or convertor, or at the transformer.
- (f) A final sub-circuit which forms the primary circuit of a fixed luminous-discharge-tube sign installation shall be reserved solely for such purpose.
- (g) A separate primary final sub-circuit shall be provided for each transformer or each group of transformers having an aggregate input not exceeding 1000 volt amperes, of a fixed luminous discharge-tube sign installation.
- (h) An interior installation shall be provided with suitable adjacent means for disconnecting all phases of the supply except the "neutral" in a three-phase four-wire circuit.
- (j) For installations on the exterior of a building a suitable emergency fire-proof linked switch to operate on all phases except the neutral in a three-phase four-wire circuit shall be provided and fixed in a conspicuous position at not more than 9 ft. above the ground.
- (k) A special "caution" notice shall be affixed in a conspicuous place on the door of every high voltage enclosure to the effect that the low voltage supply must be cut off before the enclosure is opened.
- (l) Where static condensers are used, they shall be installed on the load side of the fuses and the primary (low voltage) side of the transformer.
- (m) Where static condensers are used on primary side, means shall be provided for automatically discharging the condensers when the supply is cut off:

Provided that static condensers or any circuit interrupting devices on the high or extra-high voltage side shall not be used without the approval in writing of the Inspector.

(2) The owner or user of any luminous tube sign or similar high voltage installation shall not bring the same into use without giving to the Inspector not less than 14 day's notice in writing of his intention so to do.

**72. Additional provisions for supply to high voltage electrode boilers.**—(1) Where a system having a point connected with earth is used for supply of energy at high or extra-high voltage to an electrode boiler which is also connected with earth, the following conditions shall apply:—

- (a) The metal work of the electrode boiler shall be efficiently connected to the metal sheathing and metallic armouring (if any) of the high voltage electric supply-line whereby energy is supplied to the electrode boiler.
- (b) The supply of energy at high or extra-high voltage to the electrode boiler shall be controlled by a suitable circuit-breaker so set as to operate in the event of the phase currents becoming unbalanced to the extent of 10 per cent. of the rated current consumption of the electrode boiler under normal conditions of operation:

Provided that if in any case a higher setting is essential to ensure stability of operation of the electrode boiler, the setting may be increased so as not to exceed 15 per cent. of the rated current consumption of the electrode boiler under normal conditions of operation.

- (c) An inverse time element device may be used in conjunction with the aforesaid circuit breaker to prevent the operation thereof unnecessarily on the occurrence of unbalanced phase currents of momentary or short duration.
- (d) The supplier shall serve a notice in writing on the telegraph-authority at least seven days prior to the date on which such supply of energy is to be afforded specifying the location of every point (including the earth connection of the electrode boiler) at which the system is connected with earth.

(2) The owner or user of any high or extra-high voltage electrode boiler shall not bring the same into use without giving the Inspector not less than 14 days' notice in writing of his intention so to do.

**73. Supply to X-Ray and high frequency installation.**—(1) Any person who proposes to employ or who is employing energy for the purpose of operating an X-ray or similar high-frequency installation, shall comply with the following conditions.—

- (a) Mechanical barriers shall be provided to prevent too close an approach to any high-voltage parts of the X-ray apparatus, except the X-ray tube and its leads, unless such high-voltage parts have been rendered shock-proof by being shielded by earthed metal or adequate insulating material.
- (b) Where extra-high-voltage generators operating at 300 peak kV or more are used, such generators shall be installed in rooms to separate from those containing the other equipment and any step-up transformer employed shall be so installed and protected as to prevent danger.
- (c) A suitable switch shall be provided to control the circuit supplying a generator, and shall be so arranged as to be open except while the door of the room housing the generator is locked from the outside.
- (d) **X-ray tubes used in therapy shall be mounted in an earthed metal enclosure.**
- (e) Every X-ray machine shall be provided with a milliammeter or other suitable measuring instrument, readily visible from the control position and connected, if practicable, in the earthed lead, but guarded if connected in the high-voltage lead.
- (f) This sub-rule shall not apply to shock-proof portable units or shock-proof self-contained and stationary units.

**NOTE.**—The expression "shock-proof", as applied to X-ray and high-frequency equipment, shall mean that such equipment is guarded with earthed metal so that no person may come into contact with any live part.

(2) (a) In the case of non-shock-proof equipment, overhead high-voltage conductors, unless suitably guarded against personal contact, shall be adequately spaced and high-voltage leads on tilting tables and fluoroscopes shall be adequately insulated or so surrounded by barriers as to prevent inadvertent contact.

(b) The low voltage circuit of the step-up transformer shall contain a manually operated control device having overload protection, in addition to the over-current device for circuit protection, and these devices shall have no exposed live parts, and for diagnostic work there shall be an additional switch in the said circuit, which shall be of one of the following types:

(i) A switch with a spring or other mechanism that will open automatically except while held closed by the operator, or

(ii) a time-switch which will open automatically after a definite period of time for which it has been set.

(c) If more than one piece of apparatus be operated from the same high or extra-high-voltage source each shall be provided with a high or extra-high-voltage switch to give independent control.

(d) Low frequency current-carrying parts of a machine of the quenched-gap or open-gap type shall be so insulated or guarded that they cannot be touched during operation, the high-frequency circuit proper which delivers high-frequency current normally for the therapeutic purposes, being exempted.

(e) All X-ray generators having capacitors shall have suitable means for discharging the capacitors manually.

(f) Except in the case of self-contained units, all 200 peak kV, or higher, X-ray generators shall have a sphere-gap installed in the high-voltage system adjusted so that it will break down on over-voltage surges.

(3) (a) All non-current-carrying metal parts of tube stands, fluoroscopes and other apparatus shall be properly earthed and insulating floors, mats or platforms shall be provided for operators in proximity to high or extra-high voltage parts unless such parts have been rendered shock-proof.

(b) Where short-wave therapy machines are used, the treatment tables and examining chairs shall be wholly non-metallic.

(4) The owner of any X-ray installation or similar high-frequency apparatus shall not bring the same into use without giving to the Inspector not less than 14 days' notice in writing of his intention so to do.

## CHAPTER VIII

### OVERHEAD LINES

74. **Material & strength.**—(1) All conductors of overhead lines other than those specified in sub-rule (1) of rule 86 shall have a breaking strength of not less than 700 lbs.

(2) Where the voltage is low and the span is of less than 50 feet and is on the owner's or consumer's premises, a conductor having an actual breaking strength of not less than 300 lbs. may be used.

75. **Joints.**—Joints between conductors of overhead lines shall be mechanically and electrically secure under the conditions of operation. The ultimate strength of the joint shall not be less than 95 percent of that of the conductor, and the electrical conductivity not less than that of the conductor.

76. **Maximum stresses; Factors of safety.**—“(1) (a) The owner of every overhead line shall ensure that it has the following minimum factors of safety. The minimum factors of safety for supports based on crippling load shall be as follows:—

(i) for metal supports	2.0
(ii) for mechanically processed concrete supports	2.5
(iii) for hand-moulded concrete supports	3.0
(iv) for wood supports	3.5

The said owner shall also ensure that the strength of the supports in the direction of the line is not less than one-fourth of the strength required in the direction transverse to the line:



Provided that in the case of latticed steel or other compound structures, the factors of safety shall not be less than 1.5 under such broken wire conditions as may be specified by the State Government in this behalf.

(b) The minimum factor of safety for stay-wires, guard-wires or bearer wires shall be 2.5 based on the ultimate tensile strength of the wire.

(c) The minimum factor of safety for conductors shall be 2 based on their ultimate tensile strength. In addition, the conductor tension at 90° F., without external load, shall not exceed the following percentages of the ultimate tensile strength of the conductor—

Initial unloaded tension	.. 35 per cent;
Final unloaded tension	.. 25 per cent;

Provided that in the case of conductors having a cross-section of a generally triangular shape, such as conductors composed of 3 wires, the final unloaded tension at 90° F. shall not exceed 30 per cent. of the ultimate tensile strength of such conductor.

(2) For the purpose of calculating the factors of safety prescribed in sub-rule (1)—

- (a) the maximum wind pressure shall be such as the State Government may specify in each case;
- (b) for cylindrical bodies the effective area shall be taken as two-thirds of the projected area exposed to wind pressure;
- (c) for lattice steel or other compound structures the wind pressure on the lee-side members shall be taken as one-half of the wind pressure on the windward side members and the factors of safety shall be calculated on the crippling load of struts and upon the elastic limit of tension members;
- (d) the maximum and minimum temperatures shall be such as the State-Government may specify in each case.

(3) Notwithstanding anything contained in sub-rules (1) and (2), in localities where overhead lines are liable to accumulations of ice or snow the State Government may, by order in writing, specify the loading conditions for the purpose of calculating the factor of safety.

**77. Clearances above ground of the lowest conductor.**—(1) No conductor or an overhead line, including service lines, erected across a street shall at any part thereof be at a height less than—

- (a) for low and medium voltage lines .. 19 ft.
- (b) for high voltage lines .. 20 ft.

(2) No conductor of an overhead line, including service lines, erected along any street shall at any part thereof be at a height less than—

- (a) for low and medium voltage lines .. 18 ft.
- (b) for high voltage lines .. 19 ft.

(3) No conductor of an overhead line including service lines, erected elsewhere than along or across any street shall be at a height less than—

- (a) for low, medium and high voltage lines upto and including 11,000 volts, if bare .. 15ft.
- (b) for low, medium and high voltage lines, upto and including 11,000 volts, if insulated .. 13 ft.
- (c) for high voltage lines above 11,000 volts .. 17 ft.

(4) For extra-high voltage lines the clearance above ground shall not be less than 17ft. plus 1 foot for every 33,000 volts or part thereof by which the voltage of the line exceeds 33,000 volts:

Provided that the minimum clearance along or across any street shall not be less than 20 feet.

**78. Clearances between conductors and trolley wires.**—No conductor of an overhead line crossing a tramway or trolley-bus route using trolley wires shall have less than the following clearances above any trolley wire:

- (a) low and medium voltage lines .. 4 ft.

Provided that where an insulated conductor suspended from a bearer wire crosses over a trolley wire the minimum clearance for such insulated conductor shall be 2 ft.

- (b) high voltage lines up to and including 11,000 volts.. 6 ft.
- (c) high voltage lines above 11,000 volts .. .. . 8 ft.
- (d) extra-high voltage lines .. .. . 10 ft.

**79. Clearance from buildings of low and medium voltage lines and service lines.**—(1) Where a low or medium voltage overhead line passes above or adjacent to or terminates on any building, the following minimum clearances from any accessible point, on the basis of maximum sag, shall be observed:—

- (a) for any flat roof, open balcony, verandah roof and lean-to roof—
  - (i) when the line passes above the building a vertical clearance of 8 feet from the highest point, and
  - (ii) when the line passes adjacent to the building a horizontal clearance of 4 feet from the nearest point, and
- (b) for pitched roof—
  - (i) when the line passes above the building a vertical clearance of 8 feet immediately under the lines and—
  - (ii) when the line passes adjacent to the building a horizontal clearance of 4 feet.

(2) Any conductor so situated as to have a clearance less than that specified in sub-rule (1) shall be adequately insulated and shall be attached by means of metal clips at suitable intervals to a bare earthed bearer wire having a breaking strength of not less than 700 lbs.

(3) The horizontal clearance shall be measured when the line is at a maximum deflection from the vertical due to wind pressure.

**80. Clearance from buildings of high and extra-high voltage lines.**—(1) Where a high or extra-high voltage overhead line passes above or adjacent to any building or part of a building it shall have on the basis of maximum sag a vertical clearance above the highest part of the building immediately under such line, of not less than—

- (a) for high voltage lines up to and including 33,000 volts 12 ft.
- (b) for extra-high voltage line .. .. . 12 feet plus 1 foot for every additional 33,000 volts or part thereof

(2) The horizontal clearance between the nearest conductor and any part of such building shall, on the basis of maximum deflection due to wind pressure, be not less than.—

- (a) for high voltage lines up to and including 11,000 volts 4 ft.
- (b) for high voltage lines above 11,000 volts and up to and including 33,000 volts .. .. . 6 ft.
- (c) for extra high voltage lines .. .. . 6 ft. plus 1 foot for every additional 33,000 volts or part thereof.

**81. Conductors at different voltages on same supports.**—Where conductors forming parts of systems at different voltages are erected on the same supports, the owner shall make adequate provision to guard against danger to linesmen and others from the lower voltage system being charged above its normal working voltage by leakage from or contact with the higher voltage system; and the methods of construction and the clearances between the conductors of the two systems shall be subject to the prior approval of the inspector.

**82. Erection of or alteration to buildings.**—(1) If at any time subsequent to the erection of an overhead line (whether covered with insulating material or bare), any person proposes to erect a new building or structure, whether permanent or temporary, or to make in or upon any building or structure any

permanent or temporary addition or alteration he and the contractor he employs to carry out the erection, addition or alteration shall, if such building, structure addition or alteration would, during or after construction result in contravention of the provisions of rule 79 or 80 give notice in writing of his intention to the supplier, and to an Inspector and shall furnish therewith a scale drawing showing the proposed building, structure, addition or alteration and scaffolding required during its construction.

(2) On receipt of such notice the supplier shall, without undue delay, so alter the overhead line as to ensure that it will not be accessible in such a manner as to contravene the provisions of rule 79 or 80 either during or after construction. In the absence of an agreement to the contrary between the parties concerned the supplier shall be entitled to recover, from the person from whom the notice was received or from the person from whom he is entitled to receive such notice, the cost of such alterations which shall be deemed to include the following items, namely:—

- (a) the cost of additional material used on the alteration;
- (b) the wages of labour employed in effecting the alteration;
- (c) supervision charges to the extent of 15 per cent. of item (b); and
- (d) any charges incurred by the supplier in complying with the provisions of section 16 in respect of such alterations;

Provided that, the supplier may, before so altering the overhead line, require the person from whom the notice was received to deposit the estimated cost of such alteration, which shall in case of dispute be determined by the Inspector.

(3) No work upon such building, structure, addition or alteration shall be commenced until the Inspector has certified that neither during nor after construction the provisions of rule 79 or 80 will be contravened:

Provided that, an Inspector may, if he is satisfied that the overhead line has been so guarded as to secure the protection of persons and property from injury or risk of injury, permit the work to be executed prior to the alteration of overhead line or, in the case of a temporary addition or alteration, without the alteration of the overhead line.

**83. Clearances: General.**—For the purpose of computing the vertical clearance of an overhead line, the maximum sag of any conductor shall be calculated on the basis of the maximum sag in still air and the maximum temperature as specified by the State Government under rule 76(2)(d). Similarly for the purpose of computing any horizontal clearance of an overhead line, the maximum deflection of any conductor shall be calculated on the basis of the wind pressure specified by the State Government under rule 76(2)(a).

**84. Routes: Proximity to aerodromes.**—Overhead lines shall not be erected in the vicinity of aerodromes until the aerodrome authorities have approved in writing the route of the proposed lines.

**85. Maximum intervals between supports.**—All conductors shall be attached to supports at intervals not exceeding the safe limits based on the ultimate tensile strength of the conductor and the factor of safety prescribed in rule 76:

Provided that in the case of overhead lines carrying low or medium voltage conductors, when erected in, over, along or across any street, the interval shall not, without the consent in writing of the Inspector, exceed 220 feet.

**86. Conditions to apply where telecommunication lines and power lines are carried on same supports.**—(1) Every overhead telecommunication line erected on supports carrying a power line shall consist of conductors each having a breaking strength of not less than 600 lbs.

(2) Every telephone used on a telecommunication line erected on supports carrying a power line shall be suitably guarded against lightning and shall be protected by cut-outs.

(3) Where a telecommunication line is erected on supports carrying a high or extra-high voltage power line, arrangement shall be made to safeguard any person using the telephone against injury resulting from contact, leakage or induction between such power and telecommunication lines.

**87. Lines crossing or approaching each other.**—(1) Where an overhead line crosses or is in proximity to any telecommunication line, the owner of the overhead line shall protect it in a manner laid

down in the Code of Practice of the Power and Tele-communication Co-ordination Committee.

(2) When it is intended to erect a tele-communication line which will cross or be in proximity to an overhead line, the person proposing to erect such tele-communication line shall give notice in writing of his intention to the owner of the overhead line and the owner of the overhead line shall, within twenty-one days of receiving such notice, provide the protection referred to in sub-rule (1).

(3) Where an overhead line crosses or is in proximity to an overhead line belonging to another person, the owner of the line which was last erected shall so protect it as to guard against the possibility of its coming into contact with the other overhead line.

(4) A person erecting or proposing to erect an overhead line may require the owner of the other overhead line to provide the protection referred to in sub-rule (3) within twenty-one days of the receipt of the notice in that behalf.

(5) In all cases referred to in the preceding sub-rules, the expenses of making the guarding arrangement shall be borne by the person whose line was last erected.

(6) Where two lines cross, the crossing shall be made as nearly at right angles as the nature of the case admits.

(7) The guarding arrangement shall ordinarily be carried out by the owner of the supports on which it is made and he shall be responsible for its efficient maintenance.

(8) All work required to be done by or under this rule shall be carried out to the satisfaction of the Inspector.

**88. Guarding.**—(1) Where guarding is required under these rules the provisions of sub-rules (2) to (4) shall apply.

(2) Every guard-wire shall be connected with earth at each point at which its electrical continuity is broken.

(3) Every guard-wire shall have an actual breaking strength of not less than 1400 lbs. and if made of iron or steel, shall be galvanised.

(4) Every guard-wire or cross-connected system of guard-wires, shall have sufficient current-carrying capacity to ensure the rendering dead, without risk of fusing of the guard-wire or wires till the contact of any live wire has been removed.

(5) Lines crossing trolley-wires—In the case of a crossing over a trolley wire the guarding shall fulfil the following conditions namely:—

(a) where there is only one trolley-wire, two guard-wires shall be erected as in diagram A;

(b) where there are two trolley-wires and the distance between them does not exceed 15 inches, two guard-wires shall be erected as in diagram B;

(c) where there are two trolley-wires and the distance between them exceeds 15 inches but does not exceed 48 inches, three guard-wires shall be erected as in diagram C;

(d) where there are two trolley-wires and the distance between them exceeds 48 inches, each trolley-wire shall be separately guarded as in diagram D;

(e) the rise of the trolley boom shall be so limited that, if the trolley leaves the trolley-wire, it shall not foul the guard wires; and

- (f) where a telegraph-line is liable to fall or be blown down upon an arms, stay-wire or span-wire, and so slide down upon a trolley-wire, guard hooks shall be provided to prevent such sliding.

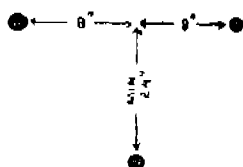


DIAGRAM A

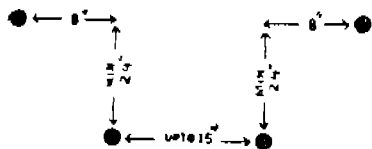


DIAGRAM B

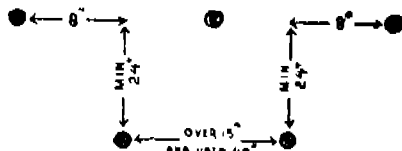


DIAGRAM C



DIAGRAM D

89. **Service-lines from overhead lines.**—No service-line or tapping shall be taken off an overhead line except at a point of support.

90. **Earthing.**—(1) All metal supports of overhead lines and metallic fittings attached thereto, shall be permanently and efficiently earthed. For this purpose a continuous earth wire shall be provided and securely fastened to each pole and connected with earth ordinarily at four points in every mile, the spacing between the points being as nearly equidistant as possible. Alternatively, each support and the metallic fitting attached thereto shall be efficiently earthed.

(2) Each stay-wire shall be similarly earthed unless an insulator has been placed in it at a height not less than 10 ft. from the ground.

91. **Safety and protective devices.**—(1) Every overhead line (not being suspended from a dead bearer wire and not being covered with insulating material and not being a trolley-wire) erected over any part of a street or other public place or in any factory or mine or on any consumer's premises shall be protected with a device approved by the Inspector for rendering the line electrically harmless in case it breaks.

(2) An Inspector may by notice in writing require the owner of any such overhead line wherever it may be erected to protect it in the manner specified in sub-rule (1).

(3) The owner of every high and extra high voltage overhead line shall make adequate arrangements to the satisfaction of the Inspector to prevent unauthorized persons from ascending any of the supports of such overhead lines without the aid of a ladder or special appliances.

92. **Protection against lightning.**—(1) The owner of every overhead line which is so exposed as to be liable to injury from lightning shall adopt efficient means for diverting to earth any electrical surges due to lightning.

(2) The earthing lead for any lightning arrester shall not pass through any iron or steel pipe, but shall be taken as directly as possible from the lightning-arrester to a separate earth electrode subject to the avoidance of bends wherever practicable.

93. **Unused overhead lines.**—(1) Where an overhead line, ceases to be used as an electric supply line, the owner shall maintain it in a safe mechanical condition in accordance with rule 76 or shall remove it.

(2) Where any overhead line ceases to be used as an electric supply line, an Inspector may, by a notice in writing served on the owner, require him to maintain it in a safe mechanical condition or to remove it within fifteen days of the receipt of the notice.

## CHAPTER IX

### ELECTRIC TRACTION

**94. Additional rules for electric traction.**—(1) The rules in this Chapter apply only where energy is used for purposes of traction:

Provided that nothing in this Chapter shall apply to energy used for the public carriage of passengers, animals or goods on, or for the lighting or ventilation of the rolling stock of, any railway or tramway subject to the provisions of the Indian Railways Act, 1890 (IX of 1890).

(2) In this Chapter the conductor used for transmitting energy to a vehicle is referred to as the "line" and the other conductor as the "return".

(3) The owner of the line, return, rails or trolley-wire, as the case may be, shall be responsible for the due observance of rules 95 to 108.

**95. Voltage of supply to vehicle.**—No person shall supply energy at high or extra-high voltage to any trolley-wire or other conductor used in direct electrical and mechanical connection with any vehicle, except with the written approval of the Central or the State Government as the case may be and subject to such conditions as the Central or the State Government may think reasonable and proper in the circumstances.

**96. Insulation of lines.**—Every line shall be insulated throughout.

**97. Insulation of returns.**—(1) Where any rails on which cars run, or any conductors, laid between or within three feet of such rails, form any part of a return, such part may be uninsulated. All other returns or parts of a return, shall be insulated, unless they are of such conductivity as to secure the conditions required by sub-rules (2) and (3) of rule 98.

(2) Where any part of a return is uninsulated, it shall be connected with the negative or neutral of the system.

**98. Proximity to metallic pipes, etc.**—(1) Where an uninsulated return is in proximity to any metallic pipe, structure or substance, not belonging to the owner of the return, he shall, if so required by the owner of such pipe, structure or substance, connect his return therewith at the latter's expense.

(2) Where the return is partly or entirely uninsulated, the owner shall, in the construction and maintenance of his system, adopt such means for reducing the difference produced by the current between the potential of the uninsulated return at any one point and the potential of the uninsulated return at any other point as to ensure that the difference of potential between the uninsulated return and any metallic pipe, structure or substance in the vicinity shall not exceed four volts where the return is relatively positive, or one and one-third volts where the return is relatively negative.

(3) The owner of any such pipe, structure, or substance as is referred to in sub-rule (2) may, in respect of it, require the owner of the uninsulated return at reasonable times and intervals to ascertain by test in his presence, or in that of his representative, whether the condition specified in sub-rule (2) is fulfilled; and, if such condition is found to be fulfilled, all reasonable expenses of, and incidental to, the carrying out of the test shall be borne by the owner of the pipe, structure or substance.

**99. Difference of potential on return.**—Where the return is partly or entirely uninsulated, the owner shall keep a continuous record of the difference of potential, during the working of his system, between every junction of an insulated return with an uninsulated return and the point on the route most distant from that junction, and the difference of potential shall not, under normal running conditions, exceed a mean value of seven volts between the highest momentary peak and the average for the hour of maximum load.

**100. Leakage on conduit system.**—Where both the line and the return are placed within a conduit, the following conditions shall be fulfilled in the construction and maintenance of the system:—

- (a) where the rails are used to form any part of the return, they shall be electrically connected, (at distances not exceeding 100 feet apart) with the conduit by means of copper strips having a cross-sectional

area of at least one-sixteenth of a square inch or by other means of equal conductivity. Where the return is wholly insulated and contained within the conduit, the latter shall be connected with earth at the generating station or substation through an instrument suitable for the indication of any contact or partial contact of either the line or the return with the conduit; and

- (b) the leakage-current shall be ascertained daily, before or after the hours of running, when the line is fully charged; and if at any time it is found to exceed one ampere per mile of single tramway track, the transmission and use of energy shall be suspended unless the leakage is stopped within twenty-four hours.

**101. Leakage on system other than conduit system.**—Where both the line and the return are not placed within a conduit, the leakage-current shall be ascertained daily before or after the hours of running, when the line is fully charged; and if at any time it is found to exceed one half of one ampere per mile of single tramway track, the transmission and use of energy shall be suspended unless the leakage is stopped within twenty-four hours.

**102. Passengers not to have access to electric circuit.**—Precautions to the satisfaction of an Inspector shall be taken by the owner of every vehicle to prevent:—

- (a) the access of passengers to any portion of the electric circuit where there is danger from electric shock;
- (b) any metal, hand-rail or other metallic substance liable to be handled by passengers, becoming charged.

**103. Current density in rails.**—Where rails on which cars run are used as a return, the current density in such rails, shall not, under ordinary working conditions, exceed nine amperes per square inch of cross-sectional area.

**104. Isolation of sections.**—Every trolley-wire shall be constructed in sections not exceeding one mile in length, and means shall be provided for isolating each section.

**105. Minimum size and strength of trolley-wire.**—No trolley-wire shall be of less cross-sectional area than eight one hundredths of a square inch or shall have an actual breaking load of less than 4500 lbs.

**106. Height of trolley-wire and length of span.**—A trolley-wire or a traction-feeder on the same supports as a trolley-wire shall nowhere be at a height from the surface of the street of less than 17 feet except, where it passes under a bridge or other fixed structure, or through or along a tunnel or mineshaft or the like in which case it shall be suspended to the satisfaction of an Inspector. The intervals between the supports shall not exceed 140 feet.

**107. Earthing of guard wire.**—Every guard wire shall be connected with earth at each point at which its electrical continuity is broken and shall also be connected with the rails at intervals of not more than five spans.

**108. Records.**—(1) The owner shall, so far as is consistent with his system of working, keep the following records, namely:—

(a) daily records showing—

- (i) the maximum working current from the source of supply;
- (ii) the maximum working voltage at the source of supply;
- (iii) the difference of potential, as required by rule 99; and
- (iv) the leakage-current (if any), as required by rules 100 and rule 101, and

(b) occasional records showing—

- (i) every test made under sub-rules (2) and (3) of rule 98;
- (ii) every stoppage of leakage, together with the time occupied; and
- (iii) particulars of any abnormal occurrence affecting the electrical working of the system.

(2) Such records shall be open to examination by an Inspector or by any person authorized in writing by an Inspector.

## CHAPTER X

## ADDITIONAL PRECAUTIONS TO BE ADOPTED IN MINES AND OIL-FIELDS

**109. Application of Chapter.**—(1) The rules in this Chapter apply only.—

- (a) where energy is used in mines where the provisions of Part III of the Act apply; and
- (b) where energy is used in oilfields.

(2) In mines, the rules in this Chapter do not apply to apparatus used above ground, excepting such apparatus as may directly affect the safety of persons below ground.

**110. Responsibility for observance.**—(1) It shall be the duty of the owner, agent, or manager of a mine, or of the agent of any company operating in an oil-field, or of the owner of one or more drilled wells situated in an oil-field, to comply with and enforce the following rules and it shall be the duty of all persons employed to conduct their work in accordance with such rules.

(2) An authorized person shall be on duty in every mine or oil-field while energy is being used therein.

**111. Notices.**—(1) On or before the first day of February in every year, in respect of every mine or oilfield, returns giving the size and type of apparatus, together with such particulars in regard to circumstances of its use which may be required by the Inspector, shall be sent to the Inspector by the persons specified in rule 110 in the form set out in Annexures X or XI, whichever is applicable.

(2) The persons specified in rule 110 shall also give to the Inspector not less than seven days notice in writing of the intention to bring into use any new installation in a mine or oilfield giving details of apparatus installed and its location:

Provided that in case of any additions or alterations to an existing low and medium voltage installation, immediate notice in writing shall be sent to the Inspector before such additions or alterations are brought into use.

(3) This rule shall not apply to telecommunication or signalling apparatus.

**112. Plans.**—(1) A correct plan, on the same scale as the plan kept at the mine in fulfilment of the requirements of the Mines Act, 1952 (XXXV of 1952), shall be available in the office at the mine showing the position of all fixed apparatus and conductors therein, other than lights, telecommunication or signalling apparatus, or cables for the same.

(2) A similar plan, on the scale not less than sixteen inches to a mile shall be kept by the manager or owner of one or more wells in any oilfield.

(3) A similar plan, on such scale as the Central Government may direct, showing the position of all electric supply lines, shall be kept in the office of any licensee or other person transmitting or distributing energy in a mine or oilfield.

(4) The plans specified under the provisions of this rule shall be examined, and corrected as often as necessary to keep them reasonably up-to-date. The dates of such examinations shall be entered thereon by the manager or owner of the mine or wells and such plans shall be available to the Inspector, or an Inspector of Mines, at any time.

**113. Lighting, communications and fire precautions.**—(1) In a mine illuminated by electricity, one or more flame safety lamps, or other lights approved by the Inspector of mines, shall be maintained in a state of continuous illumination in all places where failure of the electric light at any time would be prejudicial to safety.

(2) Efficient means of communication shall be provided in every mine between the point where the switchgear provided under sub-rule (1) of rule 121 is erected and the shaft-bottom or other distributing centres in the mine.

(3) Fire extinguishing appliances of adequate capacity and of an approved type shall be installed and properly maintained in every place in a mine containing apparatus, other than cables, tele-communication and signalling apparatus.



**114. Isolation and fixing of transformer, switchgear, etc.**—(1) Where necessary to prevent danger of mechanical damage, transformers and switchgear shall be placed in a separate room compartment or box.

(2) Unless the apparatus is so constructed, protected, and worked as to obviate the risk of fire, no inflammable material shall be used in the construction of any room, compartment or box containing apparatus, or in the construction of any of the fittings therein. Each such room, compartment or box shall be substantially constructed and shall be kept dry and efficient ventilation shall be provided for all apparatus installed therein.

(3) Adequate working space and means of access, clear of obstruction and free from danger, shall, so far as circumstances permit, be provided for all apparatus that has to be worked or attended to and all handles intended to be operated shall be conveniently placed for that purpose.

**115. Method of earthing.**—Where earthing is necessary in a mine it shall be carried out by connection to an earthing system at the surface of the mine, in a manner approved by the Inspector.

- **116. Fault detectors.**—(1) Earth fault detectors or other fault detectors or recorders which include suitable fault protective devices shall be connected in every system in a mine to draw immediate attention to any defect in the insulation of the system.

(2) The operation of these instruments and devices shall be recorded daily at the generating station, substation or switch-station in a book kept for the purpose.

(3) The effectiveness of such detectors, recorders or devices shall be checked once in three months and the result of such examination or test shall be recorded in the log-sheet kept in the form set out in Annexure XII.

**117. Earthing metal, etc.**—(1) All metallic sheaths, coverings, handles, joint-boxes, switchgear frame, instrument covers, switch and fuse covers or boxes, all lampholders, (unless efficiently protected by an insulated covering made of fire-resisting material), and the frames and bedplates of generators, transformers and motors (including portable motors), shall be earthed by connection to an earthing system in the manner prescribed in rule 115.

(2) Where cables are provided with a metallic covering constructed and installed in accordance with clause (d) of rule 122, such metallic covering may be used as a means of connection to the earthing system.

(3) All conductors of an earthing system shall have conductivity, at all parts and at all joints, at least equal to 50 per cent. of that of the largest conductor used solely to supply the apparatus, a part of which it is desired to earth:

Provided that no conductor of an earthing system shall have a cross-sectional area less than 0.022 sq. in., except in the case of the earth conductor of a flexible cable used with portable apparatus where the voltage does not exceed 125 volts, and the cross-sectional area and conductance of the earth-core is not less than that of the largest of the live conductors in the cable.

(4) All joints in earth conductors and all joints in the metallic covering of cables shall be properly soldered or otherwise efficiently made.

(5) No switch, fuse, or circuit-breaker shall be inserted in any earth conductor.

(6) This rule shall not apply (except in the case of portable apparatus) to any system in a mine in which the voltage does not exceed 30 volts.

**118. Voltage limits.**—Energy shall not be transmitted into a mine at a voltage exceeding 6,600 volts and shall not be used therein at a voltage exceeding 3,300 volts:

Provided that,—

(a) where transportable motors are used, the voltage shall not exceed 650 volts;

- (b) where portable motors are used, the voltage shall not exceed 125 volts;
- (c) where electric lighting is used the system shall have a mid or neutral point connected with earth and the voltage shall not exceed 125 volts between phases;
- (d) where portable hand-lamps are used, the voltage shall not exceed 30 volts;
- (e) Where any circuit is used for the remote control or electrical interlocking of apparatus, the circuit voltage shall not exceed 30 volts if the circuit contains any plug-and-socket-coupling other than of an approved bolted type.

**119. Motors and their transformers.**—(1) Where energy is distributed at high voltage, it shall not be used without transforming to medium or low voltage, except in the case of,—

- (a) fixed machines in which the high voltage parts are stationary, and
- (b) motors, where the capacity exceeds 20 H.P.

(2) Where energy is transformed, suitable provision shall be made to guard against danger by reason of the lower voltage apparatus becoming accidentally charged above its normal voltage by leakage form, or contact with the higher voltage apparatus.

**120. Switchgear and terminals.**—Switchgear and all terminals, cable-ends, cable-joints and connections to apparatus shall be totally enclosed and shall be so constructed and maintained, installed as to comply with the following requirements:—

- (a) all parts shall be of mechanical strength sufficient to resist rough usage;
- (b) all conductors and contact areas shall be of adequate current-carrying capacity and all joints in conductors shall be properly soldered or otherwise efficiently made;
- (c) the lodgement of any matter likely to diminish the insulation or affect the working of any switchgear shall be prevented;
- (d) all live parts shall be so protected or enclosed as to prevent persons accidentally coming into contact with them and to prevent danger from arcs, short-circuits, fire, water, gas or oil;
- (e) where there may be risk of igniting gas, coal-dust, oil or other inflammable material, all parts shall be so protected as to prevent open sparking; and
- (f) every switch or circuit-breaker shall be so constructed as to be capable of opening the circuit it controls, and dealing with any short-circuit without danger.

**121. Disconnection of supply.**—(1) Properly constructed switchgear for disconnecting the supply of energy to a mine or oil-field shall be provided at the surface of the mine or oil-field at a point approved by the Inspector. During the time any cable supplying energy to the mine from the aforesaid switchgear is live, a person authorized to operate the said switchgear shall be available within easy reach thereof.

(2) When necessary in the interest of safety, appropriate apparatus suitably placed, shall be provided for disconnecting the supply from every part of a system.

(3) Where considered necessary by the Inspector in the interests of safety, the apparatus specified in sub-rule (2) shall be so arranged as to disconnect automatically from the supply any section of the system subjected to a fault.

(4) Every motor shall be controlled by switchgear which shall be so arranged as to disconnect the supply from the motor and from all apparatus connected thereto. Such switchgear shall be so placed as to be easily operated by the person authorized to operate the motor.

**122. Cables.**—All cables, other than flexible cables for portable or transportable apparatus, shall comply with the following requirements:—

(a) All such cables (other than the outer conductor of a concentric cable) shall be covered with insulating material and shall be efficiently protected from mechanical damage and supported at sufficiently frequent intervals, and in such a manner as to prevent damage to such cables;

(b) (i) except as provided in clause (c), no cables other than concentric cables or two-core or multi-core cables protected by a metallic covering, or single-core cables protected by a metallic covering and which contain all the conductors of a circuit shall be used—

(1) where the voltage exceeds 125 volts, or

(2) When an Inspector considers that there is risk of igniting gas or coal-dust or other inflammable material, and so directs;

(ii) the sheath of metal-sheathed cables and the metallic armouring of armoured cables shall be of a thickness not less than that recommended from time to time by an Institution approved by the Central Government;

(c) where a medium voltage direct current system is used, two single-core cables may be used for any circuit provided that their metallic coverings are bonded together by earth conductors so placed that the distance between any two consecutive bonds is not greater than 100 feet measured along either cable;

(d) the metallic covering of every cable shall be—

(i) electrically and mechanically continuous throughout;

(ii) earthed, if it is required by sub-rule (1) of rule 117 to be earthed by a connection to the earthing system of conductivity not less than that of the same length of the said metallic covering;

(iii) efficiently protected against corrosion where necessary;

(iv) of a conductivity at all parts and at all joints at least equal to 50 per cent. of the conductivity of the largest conductor enclosed by the said metallic covering; and

(v) where there may be risk of igniting gas, coal-dust, or other inflammable material, so constructed as to prevent, as far as is practicable, the occurrence of open sparking as the result of any fault or leakage from live conductors;

(e) cables and conductors where connected to motors, transformers, switchgear, and other apparatus, shall be installed so that—

(i) they are mechanically protected by securely attaching the metallic covering to the apparatus; and

(ii) the insulating material at each cable end is efficiently sealed so as to prevent the diminution of its insulating properties.

(f) where necessary to prevent abrasion or to secure gas-tightness, properly constructed glands or bushes shall be provided;

(g) unarmoured cables or conductors shall be conveyed either in metallic pipes or metal casings or suspended from efficient insulators by means of non-conducting material which will not cut the covering and which will prevent contact with any timbering or metal work. If separate insulated conductors are used, they shall be installed at least one and one half inches apart and shall not be brought together except at lamps, switches and fittings.

**123. Flexible cables.**—(1) Flexible cables for portable or transportable apparatus shall be two-core or multi-core (unless required for electric welding), and shall be covered with insulating material which shall be efficiently protected from mechanical injury. If a flexible metallic covering is used either as the outer conductor of a concentric cable or as a means of protection from mechanical injury, it shall not be used by itself to form an earth conductor for such apparatus, but it may be used for that purpose in conjunction with an earthing core.

(2) Every flexible cable intended for use with portable or transportable apparatus shall be connected to the system and to such apparatus by properly constructed connectors.

(3) At every point where flexible cables are joined to main cables, a switch shall be provided which is capable of entirely disconnecting the supply from such flexible cables.

(4) Every flexible cable attached to a portable or transportable machine shall be examined periodically by the person authorized to operate the machine, and, if such cable is used underground, it shall be examined at least once in each shift by such person. If such cable is found to be damaged or defective, it shall forthwith be replaced by a cable in good condition.

(5) If the voltage of the circuit exceeds low voltage, all flexible cable attached to any transportable apparatus shall be provided with flexible metallic screening or pliable armouring.

(6) All flexible metallic screening or armouring specified in sub-rule (5) shall comply with the provisions of rule 122(d):

Provided that in the case of separately screened flexible cables the conductance of each such screen shall not be less than 25 per cent of that of the power conductor and the combined conductance of all such screens shall in no case be less than that of 0.022 sq. in. copper conductor.

(7) Flexible cable exceeding 300 ft. in length shall not be used with any portable or transportable apparatus:

Provided that such flexible cable when used with coal-cutting machines for long wall operation shall not exceed 600 ft. in length.

(8) Flexible cable, when installed in a mine, shall be efficiently supported and protected from mechanical injury.

(9) Flexible cables shall not be used with apparatus other than portable or transportable apparatus.

(10) Where flexible cables are used they shall be detached or otherwise isolated from the source of supply when not in use, and arrangements shall be made to prevent the energising of such cables by unauthorized persons.

**124. Portable and transportable machines.**—The person authorized to operate an electrically-driven coal-cutter, or other portable or transportable machine, shall not leave the machine while it is in operation and shall, before leaving the area in which such machine is operating, ensure that the supply is disconnected from the flexible cable which supplies the machine. When any such machine is in operation, steps shall be taken to ensure that the flexible cable is not dragged along by the machine.

**125. Sundry precautions.**—(1) All apparatus shall be maintained reasonably free from dust, dirt and moisture, and shall be kept clear of obstruction.

(2) All apparatus other than portable and transportable apparatus shall be housed in a room, compartment or box so constructed as to protect the contents from damage occasioned by falling material or passing traffic.

(3) Inflammable or explosive material shall not be stored in any room, compartment, or box containing apparatus, or in the vicinity of any apparatus.

(4) Should there be a fault in any circuit, the part affected shall be made dead without delay, and shall remain so until the fault has been remedied.

(5) While lamps are being changed the supply shall be disconnected.

(6) No lampholder shall be in metallic connection with the guard or other metal work of a portable hand-lamp.

(7) The following notices, in Hindi and local language of the district, so designed and protected as to be easily legible at all times, shall be exhibited:

(a) at all places where electrical apparatus is in use, a notice forbidding unauthorized persons to operate or otherwise interfere with such apparatus;

- (b) at those places in the interior or at the surface of the mine where a telephone or other means of communication is provided, a notice giving full instructions to persons authorized to effect the disconnection, at the surface of the mine, of the supply of energy to the mine.

(8) All apparatus, including portable and transportable apparatus, shall be operated only by those persons who are authorized for the purpose.

(9) Where a plug-and-socket-coupling other than of bolted type is used with flexible cables an electrical inter-lock or other approved device shall be provided to prevent the opening of the coupling while the conductors are live.

**126. Precautions where gas exists.**—(1) In any part of a mine or oil-field in which inflammable gas or vapour is normally present or is likely to occur, and in any working adjacent to or approaching any such area, the following additional provisions shall apply in regard to all circuits and apparatus:—

- (a) all signalling or telecommunication circuits shall be constructed, installed, protected, operated and maintained in such a manner as to be intrinsically safe;
- (b) all cables and apparatus, including portable and transportable apparatus, used at or within 300 yards of any working face (and at any other place in the mine if the percentage of the inflammable gas or vapour in the general body of the air therein exceeds 0.5 per cent.) shall be so constructed, installed, protected, operated and maintained as to prevent the risk of open-sparking; and
- (c) the supply shall be disconnected—
- (i) immediately, if open sparking occurs, and
- (ii) during the period required for examination or adjustment of the apparatus which would necessitate the exposing of any part liable to open sparking.

The supply shall not be reconnected until the apparatus has been examined by the electrician or one of his duly appointed assistants and until the defect, if any, has been remedied or the necessary adjustment made.

- (d) all electric lamps shall be enclosed in air-tight fittings and all lamp-globes shall be hermetically sealed;
- (e) a flame safety lamp shall be provided and maintained in a state of continuous illumination near all apparatus (including portable or transportable apparatus), which remains energised and where the appearance of the flame of such safety lamp indicates the presence of inflammable gas, the supply to all apparatus in the vicinity shall be immediately disconnected and the incident reported forthwith to an official of the mine;

Provided that where appliances for automatic detection of the percentage of inflammable gas or vapour are employed in addition to the flame safety lamps, such appliances shall be approved by the Inspector of Mines and maintained in perfect working order.

(2) If, in any part of the mine, the percentage of inflammable gas in the general body of the air is at any time found to exceed one and one quarter per cent., the supply of energy shall be immediately disconnected from all cables and apparatus in the area and the supply shall not be reconnected so long as the percentage of inflammable gas exceeds that amount. Any such disconnection or reconnection of the supply shall be noted in the log-sheet (which shall be maintained in the form set out in the Annexure XII) and shall be reported to the Inspector.

**127. Shot-firing.**—When shot-firing is in progress adequate precautions shall be taken to protect apparatus and conductors other than those used for shot-firing from injury.

(2) Current from lighting or power circuits shall not be used for firing shots.

(3) The provisions of rule 123 shall apply in regard to the covering and protection of shot-firing cables, and adequate precautions shall be taken to prevent such cables touching other cables and apparatus.

**128. Signalling.**—Where electrical signalling is used—

(a) adequate precautions shall be taken to prevent signal and telephone wires coming into contact with other cables and apparatus;

(b) the voltage used in any one circuit shall not exceed 30 volts; and

(c) contact-makers shall be so constructed as to prevent the accidental closing of the circuit.

**129. Haulage.**—Haulage by electric locomotives on the overhead trolley-wire-system, at medium or low voltage, and haulage by storage battery locomotives, may be used with the prior consent in writing of the Inspector, and subject to such conditions as he may impose in the interests of safety.

**130. Earthing of neutral points.**—Where the voltage of an alternating current system exceeds 30 volts, the neutral or mid-point shall be earthed by connection to an earthing system in the manner prescribed in rule 115.

**131. Supervision.**—(1) An electrician shall be appointed in writing by the owner, agent or manager of a mine or by the agent or the owner of one or more wells in an oil-field to supervise the installation. If necessary for the proper fulfilment of the duties detailed in this rule, one or more assistants to the electrician shall also be appointed in writing by the aforesaid authority.

(2) Every person appointed to operate, supervise, examine or adjust any apparatus shall be competent to undertake the work which he is required to carry out. No person other than the electrician or a competent person acting under his supervision shall undertake any hazardous work where technical knowledge or experience is necessary.

(3) The electrician shall be responsible for the proper performance by himself or by an assistant appointed under sub-rule (1) of the following duties namely:—

(a) thorough examination of all apparatus (including the testing of earth conductors and metallic coverings for continuity) as often as may be necessary to prevent danger, and

(b) examination and testing of all new apparatus, and of all apparatus re-erected in the mine before it is put into service in a new position.

(4) In the absence of the electrician for more than three days, the owner, agent or manager of the mine or the agent or owner of one or more oil-wells in an oil-field, shall appoint in writing a substitute electrician.

(5) The electrician or the substitute electrician appointed under sub-rule (4) to replace him, shall be personally responsible for the maintenance at the mine or oil-field, of a log-book made up of the daily logsheets prepared in the form set out in Annexure XII. The result of all tests carried out in accordance with the provisions of sub-rule (3) shall be recorded in the log-sheet prepared in the form set out in Annexure XII. On receipt of a request from the Inspector, log-book shall be produced at any time for examination.

**132. Exemptions.**—The provisions of rules 110 to 128 both inclusive, and rule 131 shall not apply in any case where, on grounds of emergency or special circumstances, exemption is obtained from the Inspector. In granting any such exemption the Inspector may prescribe such conditions as he thinks fit.

## CHAPTER XI

## MISCELLANEOUS

**133. Relaxation by Government.**—(1) The State Government, or where mines, oil-fields or railways are affected, the Central Government may, by order in writing, direct that any of the provisions of rules in Chapter IV other than rules 44, and 46, and all rules in chapter V, VI, VII, VIII and IX, shall be relaxed generally or in particular case to such extent and subject to such conditions as it may think fit.

(2) The Central Government may, by order in writing, direct that any of the provisions of chapter X of these rules shall be relaxed in any particular case to such extent and subject to such conditions as it may think fit.

**134. Relaxation by Inspector.**—(1) The Inspector may, by order in writing, direct that any of the provisions of rules 44, 50(1) (a), (b) and (d), 51(1), 61(2), 63, 64(2), 65, 71 to 73 (inclusive), 76 to 80 (inclusive) and 90 shall be relaxed in any case to such extent and subject to such conditions as he may think fit.

(2) Where the voltage of any system does not exceed 125 volts the Inspector may, by order in writing, direct that any of the provisions of rules, 29 to 34 (inclusive), 36 to 39 (inclusive), 83, 92, 94 to 107 (inclusive) 114 to 117 (inclusive), 120 and 130 shall, in additions to the rules specified in sub-rule (1), be relaxed as regards such system, to such extent and subject to such conditions as he may think fit.

(3) Every relaxation so directed shall be reported forthwith to, and shall be subject to disallowance or revision by, the State Government, or where the relaxation affects mines, oil-fields or railways, by the Central Government.

**135. Supply and use of energy by non-licensees and others.**—Where any person other than a non-licensee is supplied with energy by a non-licensee or other person or has his premises for the time being connected to the conductors or plant of a non-licensee or other person, or himself generates energy and uses such energy or part thereof, such person shall be deemed to be a consumer for the purposes of rules 9, 10, 29 to 33 (inclusive), 45 to 70 (inclusive), rules 87 and 142 and the non-licensee or other person shall be subject to all the liabilities imposed on a licensee by those rules.

**136. Responsibility of Agents and Managers.**—Where any person is responsible for the observance of any of these rules, every agent and manager of such person shall also be responsible for such observance in respect of matters under their respective controls.

**137. Mode of entry.**—All persons entering in pursuance of the Act or these rules, any building which is used as a human dwelling or a place of worship shall, in making such entry, have due regard, so far as may be compatible with the exigencies of the purpose for which such entry is made, to the social and religious usages of the occupant of the building entered.

**138. Penalty for breaking seal.**—Where, in contravention of rule 56 any seal referred to in that rule is broken—

- (a) the person breaking the seal shall be punishable with fine which may extend to two hundred rupees; and
- (b) the consumer when he has not himself broken the seal shall be punishable with fine which may extend to fifty rupees unless he proves that he used all reasonable means in his power to ensure that the seal should not be broken.

**139. Penalty for breach of rule 45.**—Where any electrical installation work of the nature specified in sub-rule (1) of rule 45 has been carried out otherwise than—

- (a) under the direct supervision of a person holding a certificate of competency issued by the State Government under that rule; and
- (b) in the absence of any applicable exemption under the proviso to sub-rule of that rule, by an electrical contractor licensed by the State Government in this behalf;

the consumer or owner, the contractor (if any), through whom the work was carried out, and the person under whose immediate supervision it was carried out shall each be punishable with fine which may extend to three hundred rupees.

140. **Penalty for breach of rule 82.**—Where no notice is given under rule 82(1) both the persons proposing and the contractor he engages for erecting a new building or structure, whether permanent or temporary or for making in or upon any building or structure any permanent or temporary addition or alteration, shall be deemed to have committed a breach of rule 82(1) and shall be punishable with fine which may extend to three hundred rupees.

141. **Penalty for breach of rules.**—Any person other than an Inspector who, being responsible for the observance of any of these rules commits a breach thereof, shall be punishable for every such breach with fine which may extend to three hundred rupees, and in the case of a continuing breach with a further fine which may extend to fifty rupees, for every day after the first during which the breach has continued.

142. **Application of rules.**—Subject to the provisions of sub-section (2) of section 58, these rules shall be binding on all persons, companies and undertakings to whom licences have been granted or with whom agreements have been made by or with the sanction of Government for the supply or use of electricity before the commencement of the Act.

143. **Repeal.**—The Indian Electricity Rules, 1937 are hereby repealed:

Provided that any order made, notification issued or anything done or any action taken under any of the said rules shall be deemed to have been made, issued, done or taken under the corresponding provisions of the rules.

#### ANNEXURE I

[See clause (c) of sub-rule (1) of rule 2.]

##### SPECIFICATION RELATING TO THE DEPOSITION OF SILVER

The electrolyte shall consist of a solution of from 15 to 20 parts by weight of silver nitrate in 100 parts of distilled water. The solution must only be used once and only for so long that not more than 30 per cent. of the silver in the solution is deposited.

The anode shall be of silver, and the cathode of platinum. The current density at the anode shall not exceed 1/5 ampere per square centimetre and at the cathode 1/50 ampere per square centimetre.

Not less than 100 cubic centimetres of electrolyte shall be used in a voltmeter.

Care must be taken that no particles which may become mechanically detached from the anode shall reach the cathode.

Before weighing, any traces of solution adhering to the cathode must be removed and the cathode dried.

#### ANNEXURE II

[See sub-rule (1) of rule 7.]

##### SCALE OF FEES FOR COMPARISON WITH THE GOVERNMENT OF INDIA STANDARDS REFERRED TO IN SUB-RULE (1) OF RULE 2.

	Rs.
For an instrument intended to be used as a sub standard and submitted for special examination and testing .. ..	80
If required to be kept under observation for a period longer than one month, for each additional month or part of a month	40
For determining a resistance of standard form to highest accuracy obtainable at one temperature .. ..	20
For determining the E.M.F. of a standard cell to highest accuracy obtainable at one temperature .. ..	15

**NOTE 1.**—The instruments and apparatus under test are to be delivered at and removed from the Government Electrical Laboratory, Bhowanipore, Calcutta, free of cost to Government.

**NOTE 2.**—In tests requiring the expenditure of a considerable amount of power, a charge to cover the actual cost of the energy used, may be made.





**Power to lay mains outside area of supply 2b**

5. The licensee may lay down or place electric supply-lines for the conveyance and transmission of energy from a generating station situated or to be situated at ..... outside the area of supply to the boundary of the area of supply.

**Limits within which the supply of energy is to be compulsory 2b**

6. (1) The works to be executed to the satisfaction of the Government under clause IV of the Schedule to the Act are the following, namely:—3b

(2) If the licensee fails to comply with the provisions of sub-clause (1), the licence may be revoked.\*

**Nature of Supply**

7. (1) The nature of supply shall be ..... or such other as the State Government may allow.

**Breaking up of streets, railways and tramways 4b**

8. The licensee is specially authorized to open and break up the soil and pavement of the following streets or parts of streets which are not repairable by the Government or by a local authority, and of the following railways and tramways or parts of railways and tramways, namely:—

- (a) Streets.
- (b) Railways. 5b
- (c) Tramways. 5b

**Appointment of Electrical Engineer**

9. The licensee shall employ a resident Electrical Engineer in technical charge of the undertaking, possessing a recognised degree or diploma in electrical engineering from a recognized University or College or qualifications equivalent to such degree or diploma and such practical experience as the State Government may specify in this behalf.

**Purchase of undertaking**

10. (1) The option of purchase given by sub-section (1) of section 7 of the Act shall be exercisable on the expiry of a period of 20 years, 1c from the date of the notification of this licence and on the expiry of every subsequent period of 10 years. The terms of such purchase shall be 2c. The percentage of the value to be determined in accordance with and for the purpose of sub-section (1) of section 7 of the Act, of the lands, buildings, works, materials and plant of the licensee therein mentioned to be added under the second proviso to that sub-section to such value on account of compulsory purchase shall be ..... per cent.

\*See note to sub-clause (1) of this clause.

1b This clause should be retained only where the licensee is to supply energy from a generating station outside the area of supply. Where power to cross an intervening area is sought under section 3(1) of the Act enter details here.

2b See Section 3(2) (d) of the Act.

3b It is open to the licensee to propose a "compulsory area" or the State Government to make provision for such an area. Ordinarily it will be sufficient to enter here the names of "compulsory street" in which the licensee will lay distributing mains. If no compulsory works are specified in the licence, the State Government may subsequently direct that works are to be executed; See clause IV of the Schedule to the Act.

4b This clause to be omitted if no such powers are required in the licence. See section 12(5) of the Act and proviso to the same. Powers can be obtained subsequently; see rule 23.

5b In ordinary cases the level-crossings or points at which interference is proposed must be specified.

1c The periods after which an option to purchase arises may be less than 20 and 10 years, respectively.

2c The terms must not differ from those laid down in the Act unless the powers of section 10 are invoked to modify or cancel them.

(2) In accordance with clause (d) (ii) of sub-section (2) of section 3 of the Act, it is hereby declared that the generating station to be used in connection with the undertaking shall/shall not form part of the undertaking for the purpose of purchase under section 5 or section 7.3c.

#### Additions to, variations from, and exceptions from the Schedule to the Act 4c

11. (1) In pursuance of clause (f) of sub-section (2) of section 3 of the Act, it is hereby expressly declared that the provisions contained in the Schedule to the Act shall for the purposes of this licence be supplemented by the addition of the following clauses, namely:—5c

(2) In pursuance of clause (f) of sub-section (2) of section 3 of the Act, it is hereby expressly declared that clause/clauses 5c..... of the Schedule to the mentioned below shall be varied in the manner hereinafter indicated, namely:—5c.

(3) In pursuance of clause (f) of sub-section (2) of section 3 of the Act, it is hereby expressly declared that clause/clauses 5c..... of the Schedule to the Act shall be excepted from incorporation in this licence.

*Note.*—In the preparation of a draft licence the above model form may be varied, or added to, by the applicant so far as the Act and rules admit.

Rules Nos. 11 to 15 inclusive, as to applications for licences, should be consulted. In drawing up a draft licence the attention of the applicant is more particularly directed to the following sections of the Act, viz., 3, 4, 7, 10, 11, 12, 21, 22, 23, 27, 51 and 57; the powers under section 51 can only be conferred after the grant of the licence.

In the case of licences for bulk supply, see clause IX of the Schedule to the Act and the proviso to clause (f) of sub-section (2) of section 3 of the Act, also clause (b) of section 10 of the Act.

Signature of Applicant or his agent (if any).

Address of Applicant

#### ANNEXURE IV

*Summary of Technical and Financial Particulars for the year ended 31st March, 19 .*

[See Rule 26(3)]

#### A. TECHNICAL—

1. Year of working.
2. Area of supply in square miles.
3. Approximate population in the area of supply.
4. Installed capacity:

(a) Generating plant (excluding retired plant.)

(i) Hydraulic	..	..	..	..	kW
(ii) Steam	..	..	..	..	kW
(iii) Internal combustion	..	..	..	..	kW
TOTAL	..	..	..	..	kW

(b) Receiving Station:

Transformers	..	..	..	kVA
--------------	----	----	----	-----

5. Normal maximum Demand on the system .. kW

6. kWh generated:

(i) Hydraulic	..	..	..	..	kWh
(ii) Steam	..	..	..	..	kWh
(iii) Internal combustion	..	..	..	..	kWh
TOTAL	..	..	..	..	kWh.

3c The generating station or stations belonging to the licensee should ordinarily be included except where they form part of a traction undertaking previously authorised.

4c To be omitted if not required in any draft licence.

5c The latter part of the clause may require modification according to the circumstances.

**A. TECHNICAL—contd.**

7. kWh used for Generating Station Auxiliaries.
8. kWh purchased from other agencies.
9. kWh available for sale (6-7)+8.
10. kWh supplied free (if any) to officers and staff.
11. kWh supplied free (if any) to officers, canteen etc.
12. kWh sold.
13. kWh unaccounted for [9—(10+11+12)].
14. Fuel:
  - (a) (i) Coal and/or furnace oil consumed in tons.
  - (ii) Average calorific value per lb. of coal and/or furnace oil consumed.
  - (iii) Average cost of coal and/or furnace oil per ton.
  - (b) (i) Oil consumed in tons.
  - (ii) Average calorific value per lb. of oil consumed.
  - (iii) Average cost of oil per ton.
15. Lubricating oil:
  - (a) Quantity consumed (gallons)
  - (b) Average cost per gallon.
16. Consumers: No. Connected load kW.
  - (a) Domestic or Residential.
  - (b) Commercial.
  - (c) Industrial:
    - (i) Low & medium voltage.
    - (ii) High and/or extra-high voltage.

**TOTAL**

17. Segregation of kWh sold—
  - (i) Domestic or Residential:
    - (a) Lights\* and Fans.
    - (b) Heating and small Power.
  - (ii) Commercial:
    - (a) Lights\* and Fans.
    - (b) Heating and small Power.
  - (iii) Industrial Power:
    - (a) Low and medium voltage.
    - (b) High voltage.
  - (iv) Public Lighting.
  - (v) Traction.
  - (vi) Irrigation.
  - (vii) Public Water-Works and Sewage Pumping.
  - (viii) Supplies in bulk to Distributing Licensees.

**B. FINANCIAL—**

1. Share Capital (paid-up).
2. Loan Capital (other than loans advanced by the State Electricity Board).
3. Licensee's Capital (1 + 2).
4. Total Capital Expenditure.

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\*including unmetered supply.

**B. FINANCIAL.—contd.**

5. Capital Base [*Vide* Clause XVII(1) of the Sixth Schedule to the Electricity (Supply) Act, 1948].
6. Reasonable Return [*Vide* Clause XVII(9) of the Sixth Schedule to the Electricity (Supply) Act, 1948].
7. Clear Profit [*Vide* Clause XVII(2) of the Sixth Schedule to the Electricity (Supply) Act, 1948.]
8. Maximum sum permissible for distribution to share and Debenture holders [*vide* Clause II(1) of the Sixth Schedule to the Electricity (Supply) Act, 1948.]
9. Actual sum available for distribution to share and debenture holders.
10. Item(9) expressed as a % of item(3).
11. Item(9) expressed as a % of item(4).
12. Item (9) expressed as a % of item(5).
13. Dividend declared for the year.
  - (a) On Ordinary Shares.
  - (b) On Preference Shares.
14. Market Price of Shares:—
  - (a) Ordinary Shares.
  - (b) Preference Shares.
15. Operating Revenues (*vide* Statement III—Annexure V).
16. Operating Expenses including depreciation (*vide* Statement IV—Annexure V).
17. Depreciation set apart for the year (*Vide* Statement V—Annexure V).
18. Revenue per kWh sold (overall) (Item 15 ÷ kWh sold.)
19. Revenue per kWh sold—
  - (i) Domestic or Residential :
    - (a) Lights\* and Fans.
    - (b) Heating and small Power.
  - (ii) Commercial:—
    - (a) Lights\* and fans.
    - (b) Heating and small Power.
  - (iii) Industrial Power :
    - (a) Low and medium voltage.
    - (b) High voltage.
  - (iv) Public Lighting.
  - (v) Traction.
  - (vi) Irrigation.
  - (vii) Public Water-Works and Sewage Pumping.
  - (viii) Supplies in bulk to Distributing Licensees.
20. Cost per kWh sold (overall) (Item 16 ÷ kWh sold).

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\* Including unmetered supply.

## ANNEXURE V

[ See section 11 and rule 26 (3) ]

## ELECTRIC LICENCE, 19

DATE OF COMMENCEMENT OF LICENCE :

Name of Undertaking

Year of Operation

No. 1.—STATEMENT OF SHARE AND LOAN CAPITAL FOR THE YEAR  
ENDED 31ST MARCH 19

(Applicable to Licensees other than Local Authority Licensees.)

Description of Capital	Balance at the beginning of the year	Receipts during the year	Redeemed during the year	Balance at the end of the year	Remarks
1	2	3	4	5	6

**A—Share Capital***Authorised Capital*

... Ordinary shares of Rs. each  
 .. % Preference shares of Rs. each

*Issued Capital*

... Ordinary shares of Rs. each  
 .. % Preference shares of Rs. each

*Subscribed Capital*

... Ordinary shares of Rs. each  
 .. % Preference shares of Rs. each

*Called-up Capital.*

... Ordinary shares of Rs. each  
 .. % Preference shares of Rs. each

**Less calls in arrears.***Paid-up Capital.*

... Ordinary shares of Rs. each  
 .. % Preference shares of Rs. each

TOTAL PAID UP CAPITAL

**B—Capital Reserve.**

Share Forfeiture a/c.  
 Share Premium a/c.  
 Other items (to be specified)  
 TOTAL CAPITAL RESERVE.

**C—Loan Capital**

Loans from State Electricity Board  
 Debentures.  
 (... % Debenture of Rs. each  
 Other secured Loans.  
 Unsecured loans & advances.  
 TOTAL LOAN CAPITAL

**D—Other Capital.**

Contributions from consumers  
 including local authorities for  
 service-lines and public  
 lighting after the commence-  
 ment of the Electricity (Sup-  
 ply) Act, 1948.  
 Special items (to be specified).

TOTAL OTHER CAPITAL.

TOTAL CAPITAL RAISED AND AP-  
PROPRIATED (A + B + C + D. ).

NOTE.—Capital invested by proprietor, partnership, cooperative society, company etc. licensee which is interest bearing should be shown under 'C'—Unsecured loans and advances and that which is interest-free should be shown under 'D'—special items (to be specified).

## ANNEXURE V

## ELECTRIC LICENCE, 19

## DATE OF COMMENCEMENT OF LICENCE

*Name of local Authority**Year of Operation*No. 1—A(1).—STATEMENT OF LOANS RAISED AND REDEEMED FOR  
THE YEAR ENDED 31ST MARCH, 19*(Applicable to Local Authority Licencees.)*

Description of loans raised from time to time	Amount sanction- ed	Rate %	Period of payment		
			From	To	Amount of Annual instal- ment.
1	2	3	4	5	6

Amount of loan redeemed upto the beginn- ing of the year	Amount of loan redeemed during the year	Total loan redeemed upto the end of the year	Balance of loan out- standing at the end of the year	Remarks
7	8	9	10	11

TOTAL LOANS RAISED FOR THE  
ELECTRIFICATION SCHEME.

**No. 1-A(2).—STATEMENT OF LOAN AND OTHER CAPITAL FOR THE YEAR  
ENDED 31ST MARCH, 19**

Particulars	Balance at the begin- ning of the year	Received during the year	Redeemed during the year	Balance at the end of the year	Remarks.
1	2	3	4	5	6

**A. Capital Raised.**

Amount of loans outstanding.  
(as per col. 10 of statement 1-A (1).  
Grants and advances made from  
the general funds of the local  
authority.

Grants-in-aid from Government.

**TOTAL CAPITAL**

**B.—Capital Reserve.**

Loan redemption account (as  
per col. 9 of statement 1-A(1).

Other items (to be specified).

**TOTAL CAPITAL RESERVE.**

**C.—Other Capital.**

Consumers' contributions for  
service lines after the commence-  
ment of the Electricity (Supply)  
Act, 1948. Special items (to  
be specified).

**TOTAL OTHER CAPITAL.**

**TOTAL—CAPITAL RAISED AND  
APPROPRIATED (A. B. C. D.)**



**No. II.—STATEMENT OF CAPITAL EXPENDITURE FOR THE YEAR ENDED  
31st MARCH, 19**

	Balance at the begin- ning of the year	Additions during the year	Retirements during the year vide Col. 3 Statement II-A.	Balance at the end of the year.	Remarks
1	2	3	4	5	6

**A. Intangible Assets.**

1. Preliminary & Promotional expenses.
2. Cost of licence.
3. Other expenses *e.g.*, expenses incidental to conversion from D.C. to A.C. change of frequency etc.

TOTAL INTANGIBLE ASSETS.

**B.—Hydraulic Power Plant.**

1. Land & Rights.
2. Buildings and civil engineering works containing generating plant and equipment.
3. Hydraulic works forming part of a hydro-electric system including—
  - (i) dams, spillways, weirs, canals, reinforced concrete flumes and syphons.
  - (ii) reinforced concrete pipe-lines and surge tanks, steel pipelines, sluice gates, steel surge tanks, hydraulic control valves and other hydraulic works.
4. Water wheels, Generators & ancillary equipment including plant foundations.
5. Switchgear including cable connections.
6. Miscellaneous power plant equipment.
7. Other civil works (to be specified).

TOTAL HYDRAULIC POWER PLANT.

**C. Steam Power Plant.**

1. Land & Rights.
2. Buildings and civil engineering works containing generating plant and equipment.
3. Boiler plant and equipment including plant foundations.

	1	2	3	4	5	6
4. Engines, Turbines, Generators and ancillary equipment including plant foundations.						
5. Water cooling system comprising cooling towers and circulating water systems.						
6. Switchgear including cable connections.						
7. Miscellaneous power plant and equipment.						
8. Other Civil Works (to be specified).						
<b>TOTAL STEAM POWER PLANT.</b>						
<b>D. Internal Combustion Power Plant.</b>						
1. Land & Rights.						
2. Buildings and civil engineering works containing generating plant and equipment.						
3. Engines, Generators and ancillary equipment including plant foundations.						
4. Water cooling system comprising cooling towers and circulating water systems.						
5. Switchgear including cable connections.						
6. Miscellaneous power plant and equipment.						
7. Other civil works (to be specified).						
<b>TOTAL INTERNAL COMBUSTION POWER PLANT.</b>						
<b>Transmission Plant (High or Extra-High Voltage).</b>						
1. Land & Rights.						
2. Buildings and Structures including civil engineering works containing transmission plant and equipment.						
3. Sub-station transformers, transformer kiosks, substation equipment and other fixed apparatus including plant foundations.						
(i) transformers including foundations having a rating of 100 kilovolt amperes and over.						
(ii) Others.						
4. Switchgear including cable connections.						

1

2

3

4

5

6

5. Towers, Poles, Fixtures, Over-head conductors and devices.

(i) lines on steel or reinforced concrete supports operating at nominal voltages higher than 13.2 kilovolts.

(ii) other lines on steel or reinforced concrete supports.

(iii) lines on wood supports.

6. (i) Underground cables and devices including joint boxes and disconnecting boxes.

(ii) Cable duct system.

**TOTAL TRANSMISSION PLANT.**

**F. Distribution Plant—High Voltage.**

1. Land & Rights.

2. Buildings and Structures including civil engineering works containing distribution plant and equipment.

3. Sub-station transformers, transformer kiosks, substation equipment and other fixed apparatus including plant foundations.

(i) transformers, including foundations having a rating of 100 kilovolt amperes and over.

(ii) others.

4. Switchgear including cable connections.

5. Towers, Poles, Fixtures, Over-head conductors and devices.

(i) lines on steel or reinforced concrete supports operating at nominal voltages, higher than 13.2 kilovolts.

(ii) other lines on steel or reinforced concrete supports.

(iii) lines on wood supports.

6. (i) Underground cables and devices including joint boxes and disconnecting boxes.

(ii) Cable duct system.

7. Service lines.

8. Metering equipment.

**TOTAL DISTRIBUTION PLANT (H.V.)**

**G. Distribution Plant—Medium and low Voltage.**

1. Land & Rights.

2. Buildings and structures including civil engineering works containing distribution plant and equipment.

	1	2	3	4	5	6
--	---	---	---	---	---	---

3. Sub-station transformers, transformers kiosks, sub-station equipment and other fixed apparatus including plant foundations.

(i) transformers including foundations having a rating of 100 kilovolt amperes and over.

(ii) others.

4. Switchgear including cable connections.

5. Towers, Poles, Fixtures, Overhead conductors and devices.

(i) lines on steel or reinforced concrete supports.

(ii) lines on wood supports.

6. (i) Underground cables and devices including joint boxes and disconnecting boxes.

(ii) Cable duct system.

7. Service lines.

8. Metering equipment.

*Total Distribution Plant (M. & L.V.).*

#### H. Public Lighting.

1. Street & signal lighting systems.

#### J. General Equipment.

(Not allocated to other sub-heads)

1. Land & Rights.

2. Buildings and structures.

3. Office furniture and equipment.

4. Transportation equipment.

5. Laboratory and meter testing equipment.

6. Workshop plant and equipment.

7. Tools and work equipment.

8. Communication equipment.

9. Miscellaneous equipment.

*Total General equipment.*

**TOTAL CAPITAL ASSETS IN USE.**

NOTES :—(1) Capital expenditure on items F7 and G7 should include contributions made by consumers towards service line charges.

(2) Where it is not possible to give segregation of capital expenditure in respect of certain items and where high ; medium or low voltage distribution lines are carried on same supports, the combined figures for such items may be given.

(3) Retirements during the year referred to in Col. 4 in respect of :

(i) intangible assets relate to amounts written off during the year.

(ii) tangible assets relate to the original cost of assets transferred to the special account under Paragraph VII of the Sixth Schedule to the Electricity (Supply) Act, 1948.

NO. II-A.—STATEMENT SHOWING THE WRITTEN-DOWN COST OF FIXED ASSETS RETIRED ON ACCOUNT OF OBSOLESCENCE INADEQUACY; SUPERFLUITY ETC.

Particulars of the Assets	Written down cost of assets at the beginning of the year	Written down cost of assets retired during the year vide col. 4 St. II less column 8 Statement V	Written down cost of assets sold during the year	Amount realised during the year	Excess of sale proceeds over written-down cost transferred to "contingencies Reserve" Account—vide Col. 4 of Statement VI	Annual instalment written-off during the year vide Col. 7 Statement VI	Balance of written-down cost at the end of the year
1	2	3	4	5	6	7	8

## No. III.—STATEMENT OF OPERATING REVENUES FOR THE YEAR ENDED 31ST MARCH 19 .

Particulars of revenue	Corresponding amount for the previous year of account	Amount for the year of account	Remarks
1	2	3	4

**A—NET REVENUE BY SALE OF ELECTRICITY  
FOR CASH & CREDIT —****1. Domestic or residential**

(a) Lights and Fans.

(b) Heating and small power.

**2. Commercial.**

(a) Lights and Fans.

(b) Heating and small power.

**3. Industrial.**

(a) Low &amp; Medium voltage.

(b) High voltage.

**4. Public Lighting.****5. Public Water Works & Sewage pumping.****6. Irrigation.****7. Traction.****8. Supplies in bulk to distributing licensees.***Total Revenue by sale of electricity.***B—MISCELLANEOUS REVENUE FROM CON-  
SUMERS :—****1. Rentals from**

(a) Meters.

(b) Electric motors, fittings, appliances and  
other apparatus hired to consumers.**2. Service connection fees.****3. Public Lighting Maintenance.***Total Miscellaneous Revenue from consumers.***C—OTHER REVENUES.****1. Sale of stores.****2. Repair of lamps and other apparatus.****3. Commission for the collection of electricity  
duty.****4. Other miscellaneous items ( to be specified).***Total Other Revenue.***TOTAL OPERATING REVENUES.****Deduct.**

Total Operating Expenses as per St. IV.

Net surplus or deficit carried to the Net Revenue

&amp; Appropriations a/c—St. X.

No. IV STATEMENT OF OPERATING EXPENSES FOR THE YEAR ENDED  
31st MARCH, 19

Particulars of expenses	Corresponding amount for the pre- vious year of account	Amount for the year of account	Remarks
1	2	3	4

**A. HYDRAULIC POWER GENERATION**

*(a) Operation.*

1. Water for power.
2. Lubricants & other consumable stores.
3. Station supplies and miscellaneous expenses
4. Proportion of salaries, allowances, gratuities etc. of Engineers, Superintendents, Officers, Supervisory and other staff.
5. Wages and gratuities of labour
6. Contributions to Provident Fund or Staff Pension.

Total Operation

*(b) Maintenance.*

1. Salaries for supervisory staff.
2. Buildings and civil engineering works containing generating plant & equipment.
3. Hydraulic works forming part of a hydro-electric system, including—
  - (i) dams, spillways, weirs, canals, reinforced concrete flumes & syphons.
  - (ii) reinforced concrete pipe-lines, and surge tanks, steel pipelines, sluice gates, steel surge tank hydraulic control valves and other hydraulic works.
4. Water wheels, generators & ancillary equipment including plant foundations,
5. Switchgear including cable connections.
6. Miscellaneous power plant equipment.
7. Other civil works ( to be specified.)
8. Contributions to Provident Fund or Staff Pension.

*Total Maintenance*

*(c) Depreciation.*

Depreciation on Hydraulic Power Generating Plant & Equipment (from statement V).

**TOTAL HYDRAULIC POWER GENERATION  
EXPENSES :**

1

1

2

3

4

**B. STEAMPOWER GENERATION.***(a) Operation.*

1. Fuel (excluding sale proceeds of steam, ashes etc.)
2. Lubricants and other consumable stores.
3. Water (if purchased separately)
4. Station supplies and miscellaneous expenses.
5. Proportion of salaries, allowances, gratuities, etc. of Engineers, Superintendents, Officers, supervisory and other staff.
6. Wages and gratuities for labour.
7. Contributions to Provident Fund or Staff Pension.

*Total Operation**(b) Maintenance.*

1. Salaries for supervisory staff.
2. Buildings and civil engineering works containing generating plant & equipment.
3. Boiler plant and equipment including plant foundations.
4. Engines, turbines, generators and ancillary equipment including plant foundations.
5. Water cooling system comprising cooling towers and circulating water systems.
6. Switchgear including cable connections.
7. Miscellaneous power plant and equipment.
8. Other Civil works (to be specified)
9. Contributions to Provident Fund or Staff Pension.

*Total Maintenance.**(c) Depreciation.*

Depreciation on Steam Power Generating Plant & Equipment (from statement V).

**TOTAL STEAM POWER GENERATION EXPENSES.****C. INTERNAL COMBUSTION POWER GENERATION.***(a) Operation.*

1. Fuel
2. Lubricants & other consumable stores.
3. Water (if purchased separately)
4. Station supplies and miscellaneous expenses.
5. Proportion of salaries, allowances, gratuities, etc. of Engineers, Superintendents, Officers, supervisory and other staff.
6. Wages and gratuities to labour.
7. Contributions to Provident Fund or Staff Pension.

*Total Operation*



1

2

3

4

*(b) Maintenance.*

1. Salaries for supervisory staff.
2. Buildings and civil engineering works containing generating plant & equipment.
3. Engines, generators and ancillary equipment including plant foundations.
4. Water cooling system comprising cooling towers & circulating water systems.
5. Switchgear including cable connections.
6. Miscellaneous power plant and equipment.
7. Other civil works (to be specified)
8. Contributions to Provident Fund or Staff Pension

*Total Maintenance.**(c) Depreciation.*

Depreciation on Internal Combustion Power Generating Plant & Equipment (from statement V).

**TOTAL INTERNAL COMBUSTION POWER GENERATION EXPENSES :**

**D. POWER PURCHASED :**

**TOTAL PRODUCTION EXPENSES  $A+B+C+D$**

**E. TRANSMISSION (HIGH OR EXTRA-HIGH VOLTAGE)**

*(a) Operation and Maintenance .*

1. Proportion of salaries, allowances, gratuities etc. of Engineers, Superintendents, Officers, supervisory and other staff.
2. Wages & gratuities to sub-station labour.
3. Wages & gratuities to labour on lines.
4. Buildings and structures including civil engineering works containing transmission plant and equipment.
5. Sub-station transformers, transformer kiosks, sub-station equipment and other fixed apparatus including plant foundations.
  - (i) Transformers including foundations having a rating of 100 kilovolt amperes and over
  - (ii) Others.
6. Switchgear including cable connections.
7. Towers, Poles, Fixtures, Overhead conductors and devices
  - (i) lines on steel or reinforced concrete supports operating at nominal voltages, higher than 13.2 kilovolts.
  - (ii) other lines on steel or reinforced concrete supports.
  - (iii) lines on wood supports.

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8. (i) Underground cables and devices including joint boxes and disconnecting boxes.

(ii) Cable duct system

9. Contributions to Provident Fund or Staff Pension.

(b) *Depreciation on Transmission Plant & Equipment (from statement V).*

*Total Transmission Expenses*

## F. DISTRIBUTION (HIGH VOLTAGE).

### (a) *Operation and Maintenance.*

1. Proportion of salaries, allowances, gratuities etc. of Engineers, Superintendents, Officers, supervisory and other staff.

2. Wages & gratuities to sub-station labour.

3. Wages and gratuities to labour for mains.

4. Buildings and structures including civil engineering works containing distribution plan and equipment.

5. Sub-station transformers, transformer kiosks, sub-station equipment and other fixed apparatus including plant foundations.

(i) transformers including foundations having a rating of 100 kilovolt amperes and over.

(ii) others.

6. Switchgear including cable connections.

7. Towers, Poles, Fixtures, Overhead conductors and devices.

(i) lines on steel or reinforced concrete supports operating at nominal voltages, higher than 13.2 kilovolts.

(ii) other lines on steel or reinforced concrete supports.

(iii) lines on wood supports.

8. (i) Underground cables and devices including joint boxes and disconnecting boxes.

(ii) Cable duct system.

9. Service lines.

10. Metering Equipment.

11. Contributions to Provident Fund or Staff Pension.

(b) *Depreciation on Distribution Plant and Equipment (from statement V).*

*Total Distribution (H.V.) expenses.*

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**G. DISTRIBUTION (MEDIUM AND LOW VOLTAGE)***(a) Operation and Maintenance.*

1. Proportion of salaries, allowances, gratuities etc. of Engineers Superintendents, Officers, Supervisory & other staff.
2. Wages & Gratuities to labour.
3. Buildings & structures including civil engineering works containing transmission plant and equipment.
4. Sub-station transformers, transformer kiosks, substation equipment and other fixed apparatus including plant foundations.
  - (i) transformers including foundations having rating of 100 kilovolt amperes and over.
  - (ii) others.
5. Switchgear including cable connections.
6. Towers, Poles, Fixtures, Overhead conductors and devices.
  - (i) lines on steel or reinforced concrete supports.
  - (ii) lines on wood supports.
7. (i) Underground cables and devices including joint boxes and disconnecting boxes.
  - (ii) Cable duct system.
8. Service lines.
9. Metering equipment.
10. Contributions to Provident Fund or staff pension.

*(b) Depreciation on Distribution Plant and Equipment (from statement V).**Total Distribution (M. & L.V.) Expenses.***H. PUBLIC LIGHTING***(a) Operation and Maintenance*

1. Operation & Maintenance.
  2. Renewal of lamps.
- (b) Depreciation on P.L. system & equipment (from statement V).*

*Total Public Lighting Expenses.***J. CONSUMERS' SERVICING, METER READING, BILLING, COLLECTING, ACCOUNTING, SALES PROMOTING ETC.**

1. Proportion of salaries, allowances, gratuities etc. of Engineers, Secretary, Accountants, other officers etc.
2. Meter reading and inspection.
3. Billing, Collecting and accounting.
4. Exhibitions, Demonstrations and advertisements.
5. Merchandising, servicing and contract work.
6. Miscellaneous expenses.

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7 Contributions to Provident Fund of staff pension.

8. Depreciation on general assets and equipment, which are not allocated to other sub-heads.  
(from statement V)

*Total Consumers' Servicing, Meter-reading etc.*

#### K. GENERAL ESTABLISHMENT CHARGES.

1. Proportion of salaries, allowances, gratuities etc. of general officers, executives etc.
2. Salaries, wages, gratuities etc. of general office staff.
3. Contributions to local authority administration for supervision (applicable to local authority licences only).
4. Travelling and other expenses of officers and staff.
5. Rents and Wayleaves.
6. Rates and Taxes.
7. General Office expenses and show-room maintenance and supplies.
8. Repairs to office buildings, staff quarters, furniture and fixtures, office equipment etc., and maintenance.
9. Depreciation on office and general buildings, furniture etc. not allocated to other sub-heads.  
(from Statement V).
10. Audit services :  
(a) Auditor of company.  
(b) Auditor appointed under the provisions of the Act.
11. Legal services.
12. Insurance expenses.
13. Contributions to Provident Fund or Staff Pension.

*Total General Establishment Charges.*

#### L. OTHER CHARGES

1. Interest paid and accrued on :  
(a) Loans advanced by State Electricity Board.  
(b) Depreciation fund.  
(c) Consumers' security deposits.
2. Bad debts written off.
3. Other items (to be specified.)  
*Total other charges.*

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M. MANAGEMENT EXPENSES.

1. Directors' fees and expenses and Debenture Trustees' fees, if any.
2. Managing Agents' ordinary remuneration.
3. Managing Agents' office allowances.  
*Total Management Expenses.*

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TOTAL OPERATING EXPENSES TRANSFERRED TO STATEMENT III.

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*Note.*—(1) No apportionment of expenses under sub-head 'M' be made to any of the salary items under A-(a)4, B-(a)5, C-(a)5, E(a)1, F(a)-1, G(a)-1, J-1 and K-1 which shall include the proportion of salaries and allowances of persons solely employed for the purpose of the undertaking and of the engineering staff employed by the Managing Agents under the provision of subpara(3) of Para XIII of the Sixth Schedule to the E(S) Act, 1948.

- (2) Managing Agents in this context refer to the Managing Agents appointed under Section 87 of the Indian Companies (Amendment) Act, 1936.

## No. V.—STATEMENT OF PROVISION FOR DEPRECIATION FOR THE YEAR ENDED 31st MARCH 19

Description of assets in Groups as per Statement II	Balance of accrued depreciation brought forward from last account	Balance of arrears of depreciation brought forward from last account	Additions during the year			Total	Withdrawals during the year, vide column 3 Statement II-A.	Balance of depreciation carried over to next account	Balance of arrears of depreciation carried over to next account	Remarks
			Interest @ 4 % per annum on the balance at the beginning of the year under paragraph VI(I) of the Sixth Schedule to the Electricity (Supply) Act, 1948	Depreciation provided for the year	Arrears of depreciation written off during the year					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A. Hydraulic Power Plant.	..	..	..	..	..	..	..	..	..	..
B. Steam Power Plant										
C. Internal Combustion—Power Plant.										
D. Transmission Plant High or Extra High Voltage.										
E. Distribution Plant—High Voltage.										
F. Distribution Plant—Medium and Low Voltage.										
G. Public Lighting										
H. General Equipment										
TOTAL	..	..	..	..	..	..	..	..	..	..

Notes:—1. Withdrawals from the depreciation account are permissible only to the extent of past provisions made in respect of assets withdrawn from use and transferred during the year to the special account under Paragraph VII of the Sixth Schedule to the E(S) Act, 1948.

2. A sum of Rs. .... from the accruals in the depreciation account has been invested in securities in pursuance of the provisions of Paragraph XVII (1) (d) of the Sixth Schedule to the E(S) Act, 1948.

## No. VI.—STATEMENT OF CONTINGENCIES RESERVE FOR THE YEAR ENDED 31ST MARCH, 19

Particulars	Balance at the beginning of the year	Additions during the year		Total	Withdrawals during the year		Total	Balance at the end of the year	Remarks.
		Appropriations during the year	Additions under paragraph IX of the Sixth Schedule to the Elec. (Supply) Act, 1948 <i>vide</i> Col.6 Statement II-A.		Instalment under sub-para (3) of paragraph VII of the Sixth Schedule to the Elec. (Supply,) Act, 1948 <i>vide</i> Col. 7 Statement II-A.	Expenses and/or compensation under paragraph V of the Sixth Schedule to the Elec. (Supply) Act. 1948.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

*Note.*—A sum of Rs. .... from the balance of the Contingencies Reserve has been invested under the provisions of paragraph IV (2) of the Sixth Schedule to the Electricity (Supply) Act, 1948,

No. VII.—STATEMENT OF **TARIFFS AND DIVIDENDS CONTROL RESERVE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 19** .

Particulars	Balance at the beginning of the year	Appropriated during the year	Withdrawn during the year. (Purpose to be indicated in the Remarks Column.)	Balance at the end of year	Remarks
(1)	(2)	(3)	(4)	(5)	(6)

No. VIII.—STATEMENT OF **CONSUMERS' REBATE RESERVE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 19**

Particulars	Balance at the beginning of the year	Distributed to consumers during the year under paragraph II(1) of the Sixth Schedule to the E(S) Act. 1948	Appropriate during the year	Balance at the end of the year	Remarks
(1)	(2)	(3)	(4)	(5)	(6)



SEC. 3]

THE GAZETTE OF INDIA EXTRAORDINARY

No. X.—STATEMENT OF NET REVENUE AND APPROPRIATIONS ACCOUNT FOR THE YEAR ENDED 31<sup>st</sup> MARCH, 19 .

Correspond- ing figures of previous year	Particulars	Amount	Correspond- ing figures of previous year	Particulars	Amount
(1)	(2)	(3)	(4)	(5)	(6)
	1. To Balance of loss brought forward from last account.			1. By Balance of profit brought forward from last account.	
	2. To net operating deficit as per Statement III.			2. By net operating surplus as per Statement III.	
	3. To appropriations :—(applicable to Local Authority Licensee only).			3. By interest on securities and investments.	
	(a) Interest on loan capital.			4. By other receipts (non-operating) <i>e.g.</i> , rents	
	(b) Instalment of redemption of loan capital, as per col. 8 of St. I-A(1).			Less outgoings not otherwise provided for, transfer fee etc. (to be specified.)	
	(c) General rates.				
	4. To taxes on income and profits paid			By Balance of loss carried over.	
	5. To instalment of write-down in respect of intangible assets				
	6. To instalment of contribution towards arrears of depreciation, as per Statement V Column 6.				
	7. To contribution towards Contingencies Reserve as per Statement VI-Column 3.				
	8. To appropriation to Tariffs and Dividends Control Reserve, as per Statement VII,—Column 3.				

9. To appropriation to Consumers Rebate Reserve, as per Statement VIII.—Column 4.
10. To other special appropriation permitted by the State Government, as per Statement IX.—Column 3.
11. To appropriation towards interest paid and accrued and dividends paid and payable.
  - (a) Interest on debentures.
  - (b) interest on other secured loans.
  - (c) Interest on unsecured loans, advances, deposits, bank overdrafts etc.
  - (d) Dividends on preference share capital.
  - (e) Dividends on ordinary share capital.

To Balance of profit carried over.

NO. XI.—GENERAL BALANCE SHEET AS ON 31 ST MARCH, 19 .

Corresponding figures of previous year	Particulars	Amount	Corresponding figures of previous year	Particulars	Amount
(1)	(2)	(3)	(4)	(5)	(6)
	1. Capital raised and appropriated—vide Statement I or I-A.			1. Capital amount expended on Works in use—Statement II.	
				Less.....Accumulated provisions for depreciation.—Statement V.	
	<i>Reserves and Surplus</i>			<i>Net Block</i>	
	2. Non-statutory Reserve.			2. Balance of written down cost of obsolete, inadequate etc. assets.—Statement II-A.	
				<i>Current Assets</i>	
	3. Contingencies Reserve Fund as per Statement VI.			3. Capital works in progress.	
	4. Tariffs & Dividends control Reserve as per Statement VII.			4. Stores and materials in hand—	
				(a) Fuel—Coal and/or oil etc. at cost.	
				(b) General Stores at or below cost.	
	5. Consumers' Rebate Reserve as per Statement VIII.			5. Debtors for amounts paid in advance on account of contracts.	
	6. Special appropriations (as permitted by the State Govt.) reserve as per Statement IX.			6. Sundry debtors for electricity supplied.	
				7. Other debtors (as per schedule attached).	
	7. Balance of Net Revenue and Appropriations account as per Statement X.			8. Accounts receivable (to be specified).	
	<i>Current Liabilities and Provisions</i>			9. Investments in statutory securities at cost.	
	8. Balances due on construction of plant, Machinery etc.			(a) Contingencies Reserve Fund investment.	
				(Market value on closing date).	
				(b) Depreciation Reserve Fund investment.	
				(Market value on closing date).	
				(c) Other investments	
				(Market value on closing date.)	

Corresponding figures of previous year	Particulars	Amount	Corresponding figures of previous year	Particulars	Amount
(1)	(2)	(3)	(4)	(5)	(6)
	9. Creditors on open accounts (as per schedule attached).			10. Special deposits. (a) In respect of taxation. (b) Others (to be specified).	
	10. Consumers' security deposits.			11. Balance at Bank. (a) Deposit account. (b) Current account and at Call.	
	11. Accounts payable (to be specified).			12. Cash in hand.	
	12. Temporary accommodations, Bank overdrafts and other finances.			<i>Debit Balances</i>	
	13. Other current and accrued liabilities (to be specified).			13. Net Revenue and Appropriations account. Balance at debit thereof—Statement X.	
	14. Contingent liabilities and outstanding commitments, if any, to be stated on the face of this balance-sheet.			14. Deferred payments.	

## ANNEXURE VI

(See Rule 27)

Name of undertaking\_\_\_\_\_

## MODEL FORM OF DRAFT CONDITIONS OF SUPPLY

## 1. General:

- (a) "The Act" means the Indian Electricity Act, 1910, as in force from time to time.
- (b) "Licensee" means.

..... :.....

- (c) "Consumer" means any person who is supplied with energy by the licensee or whose premises are for the time being connected for the purposes of supply of energy with the works of the licensee.
- (d) "Date of presentation" means the second day after the date of any bill rendered by the licensee.

2. *Application and agreement for supply.*—(a) Application and agreement for supply of electrical energy shall be made in the form attached hereto (Appendix 'A') obtainable free of cost at the local office of the licensee. The application shall be signed by the owner or occupier of the premises for which supply is required. Any assistance and information required for filling up the form will be given to the applicant at the local office of the licensee.

(b) If the supply is required for motors the applicant shall state the purpose for which the motors are required.

3. *Notice before connection.*—The intending consumer must give at least one month's notice before the supply is required.

4. *Notice for fixing the position of service, meter etc.*—Upon receipt of the requisition for supply, seven clear day's notice shall be sent by the licensee to the applicant for supply or to the contractor acting on his behalf, for his representative to meet the engineer of the licensee for the purpose of inspecting the premises and fixing the point of entry of supply mains and the position of the mains, cut-outs or circuit-breakers and meters. The licensee will in no case, fix meters and main cut-outs, nor allow the same to remain in any position which entails entry of its employees into purdah or religious quarters.

5. *Quotations etc. for laying service lines.*—(a) The position for the service having been agreed upon as provided for in condition No. 4 above, the licensee shall thereafter submit to the applicant a quotation of the estimate of the cost of carrying out the work. The quotation having been accepted, the applicant shall be required to deposit the amount of the estimate with the licensee before the service is laid. The deposit having been duly paid, orders shall be issued for the work to be put in hand and the amount so deposited shall be subsequently adjusted, if necessary, on compilation of the figures of the actual cost of the service line. Other conditions being equal, service lines shall as far as possible be laid in the order of the dates of receipt of the deposit money.

NOTE.—The service line, notwithstanding that a portion of the cost has been paid for by the consumer, shall remain the property of the licensee by whom it is to be maintained.

(b) If a consumer desires to have the position of the existing service line altered, the licensee shall carry out the work & charge the consumer the cost of the additional material used and the labour employed plus 15 per cent. of the latter as supervision charges.

(c) Service lines for temporary illumination shall be laid by the licensee where possible and the cost incurred in laying and removing such service lines as determined in the manner laid down in clause (b) above shall be paid by the consumer.

(d) Where any difference or dispute arises as to the cost or fixing of the position of service lines, the matter shall be referred to the Electric Inspector for..... and shall be decided by him.

(e) A consumer requiring high voltage supply must provide and maintain at his expense a locked and weather proof enclosure of agreed design, for the purposes of housing the licensee's metering equipment. Such an enclosure may be used by the consumer for his own similar metering equipment but for no other purposes.

6. *Service Lines.*—The licensee shall lay free of charge 100 feet of service line from his nearest distribution main outside the limits of the property in respect of which the requisition is made. Any length in excess of 100 feet, as defined above and the whole of the service line within the limits of the property in respect of which the application is made shall be paid for by the applicant. The cost mentioned above, however, shall be exclusive of the proportionate cost of the first pole and fittings beyond 100 feet aforesaid. The proportionate cost of such poles and fittings shall be in the same ratio as 100 feet is to the length of the line beyond 100 feet from the point of tap-off of the service and the second support of the service line.

The main cut-outs or fuses shall be inserted and sealed by the licensee free of cost to the consumer.

7. *Consumer not to interfere with the supply mains or apparatus.*—The meter boards, main cut-outs etc. must on no account be handled or removed by any one who is not in the employ of the licensee. The seals which are fixed on the meters and the licensee's apparatus must on no account be broken.

8. *Wiring on consumer's premises.*—For the protection of the consumer and public generally, it is necessary that the wiring on the consumer's premises should conform to the I.E. Rules and the Rules of the Fire Insurance company in terms of which the building is insured and be carried out by a licensed electrical contractor. As soon as the consumer's installation is completed in all respects and tested by the consumer's contractor, the consumer should submit to the licensee the wiring contractor's completion and test report. A form for this purpose shall be supplied by the licensee. It is important that the conditions named therein are fully complied with, as otherwise there will be a delay in obtaining the supply.

As required by Rule 45 of the Indian Electricity Rules, 1956 no electrical installation work (including additions, alterations, repairs and adjustments to existing installations), except such replacement of lamps, fans, fuses, switches, low voltage domestic appliance and fittings as in no way alter the capacity and the character of the installation, shall be carried out upon the premises on behalf of any consumer or owner for the purposes of supply of energy to such consumer or owner, except by an electrical contractor licensed by the ..... in this behalf and under the direct supervision of a person holding a certificate of competency issued or recognized by the ..... Any person committing a breach of Rule 45 shall render himself liable to punishment under Rule 139 of the said Rules.

9. *Apparatus on consumer's premises.*—(a) All transformers, switchgear and other electrical equipment belonging to the consumer and connected to the mains of the licensee shall be maintained to the reasonable satisfaction of the licensee.

(b) In the case of high voltage consumers, suitable protective devices approved by the licensee shall be used so as to afford full protection to the licensee's apparatus placed on the consumer's premises.

10. *Procedure for testing installation by the licensee and fee.*—(a) Upon receipt of the test report the licensee shall notify to the applicant the time and the day when the licensee's representative proposes to inspect and test the installation. It will then be the duty of the applicant to arrange that a representative of the wiring contractor employed by him is present at the inspection to give the licensee's representative any information that may be required by him concerning the installation.

(b) No connection shall be made until the consumer's installation has been inspected and tested by the licensee and found satisfactory. No charge shall be made for the first test made by the licensee but subsequent tests due to faults disclosed at the initial test shall be charged for in accordance with part III of these conditions. Periodical tests of the installation will also be undertaken by the licensee at rates that may be ascertained from his local office.

(c) Before taking the insulation test of the installation the wiring must be completed in all respects. All fittings, whether incandescent lamps, fans, motors, heating, cooking, or other apparatus, must be connected to the conductors and all fuses must be in place and all switches switched in the 'on' position before the tests are carried out. Temporary wires or fittings or dead ends should not be included in the installation and no part of the work should be left incomplete.

(d) A pressure of 500 volts will be applied between installation and "earth" and the insulation resistance to earth after one minute's electrification shall be

such as will not cause a leakage from the installation exceeding one five thousand part of the maximum current demanded.

(c) The test between the poles should give at least half the result of that to "earth".

(f) Manufacturer's test certificates in respect of all high voltage apparatus shall be produced if required by the licensee.

11. *Extensions and alterations.*—Should the consumer, at any time after the supply of energy has been commenced, increase the number or size of lights, fans or motors etc. on his premises or in any way alter the position of his wiring therein, notice thereof must be sent in writing to the licensee whose representative will call and inspect the alteration and, if necessary, change the meters and fuses and alter the service line. Failure to give such notice may derange the supply system and render the supply liable to be summarily discontinued. During such time as alterations, additions or repairs are being executed, the supply to the circuit which is being altered, added to or repaired, must be entirely disconnected and it shall remain disconnected until the alterations, additions, or repairs have been tested and passed by the licensee.

12. *Failure of supply.*—(a) Should at any time the licensee's service fuse fuses fail, notice thereof should be sent to the licensee's local office or if there are sub-stations, to the nearest sub-station. Only authorised employees bearing the badge of the licensee are permitted to replace these fuses in the licensee's cut-outs. Consumers are not allowed to replace these fuses and they will render themselves liable to a heavy penalty if the licensee's seals placed to protect his apparatus are broken. The licensee does not allow his employees to carry out any repairs except replacement of fuses in the consumer's installation.

(b) The licensee shall not be liable for any claims for loss, damage or compensation whatsoever arising out of failure of supply when such failure is due either directly or indirectly to war, mutiny, civil commotion, riot, strike, lockout, fire, flood, tempest, lightning, earthquake or other force, accident or cause beyond his control.

13. *Access to premises and apparatus.*—The licensee's servants possessing a written authority signed by the engineer or manager of the licensee are entitled at all reasonable times and on informing the occupier to enter the premises to which the energy is supplied for the purpose of inspecting meters and for other purposes connected with the apparatus belonging to the licensee.

14. *Security Deposit.*—The licensee may require any consumer to deposit security for the payment of his monthly bills for energy supplied and for the value of the meter and other apparatus installed on his premises. No interest will be allowed on deposits upto Rs. 25/-. Interest at the rate of \_\_\_\_\_ per cent. per annum will be paid by the licensee on deposits exceeding Rs. 25/-.

The licensee shall be at liberty at any time to apply any security deposited towards payment or satisfaction of any money which shall become due or owing by the consumer. The licensee shall also be at liberty to demand enhanced security deposit from consumers at any time during the life of the contract. The balance of the security deposit will be returned to the consumer on the termination of the contract.

The consumer may at any time, with the previous consent of the licensee transfer the contract and its liabilities to any other person approved by the licensee.

15. *Method of charging for current.*—(a) The price and method of charging for current supplied shall be such as may be fixed by the licensee from time to time subject to the provisions of the Electricity (Supply) Act, 1948.

(b) Unless specified otherwise all rates refer to one point of supply.

16. *Payment of bills.*—(a) Bills should be paid at the licensee's local office within 15 days from the date of their presentation.

(b) Any complaints with regard to the accuracy of the bills shall be made in writing to the licensee and the amounts of such bills shall be paid under protest within the said period of 15 days. The amounts of bills paid under protest will be regarded as advance to the credit of the consumer's account until such time as the bills in dispute have been fully settled.

(c) If the consumer fails to pay any bill presented to him within the said period of 15 days, the licensee shall be at liberty to take action under sub-section (1) of section 24 of the Act, and to cut-off the supply after giving such



consumer not less than 7 clear days' notice in writing without prejudice to his right to recover the amount of the bill by suit. Where however, any difference or dispute has been referred under the Act to the Electric Inspector for ..... before notice as aforesaid has been given by the licensee, the licensee shall not be at liberty to cut-off the supply for failure to pay the bill except where the licensee has made a request in writing to the consumer that the amount in dispute should be deposited with the said Electric Inspector and the consumer has failed to comply with such request.

17. *Notice of removal.*—(a) Consumers about to vacate or sublet their premises should give to the licensee a seven clear days' notice in writing, together with an opportunity for disconnecting the premises, otherwise the licensee cannot guarantee that the meter readings will be taken on the required date. Failing such notice, the consumer will be held responsible for energy consumed on the premises in respect of which the licensee holds agreement for the supply of energy, until the expiration of seven days from the day on which the notice of removal in writing has been received at his office.

(b) Consumers leaving the station for a period exceeding two months and closing their houses while away, or those houses remain closed and unoccupied owing to non-tenancy for the same period are requested to inform the licensee before-hand so that the meters installed at the premises may be read, installations disconnected and the licensee's property removed if agreed to between the licensee and the consumer or otherwise to notify the licensee where the key can be obtained to enable the licensee's engineer to remove the fuses whenever it is desired to test the distribution mains in the consumer's district. In such cases consumers will not be charged the monthly minimum provided that:—

- (i) the rental of meter or meters of the licensee shall be paid so long as they remain on the consumer's premises; if the meters are removed the charges as provided for in part III will be payable for removing and refixing the meters;
- (ii) the consumer agrees to the extension of the term of the agreement by the period by which the monthly minimum charge has been waived if the period of his contract had not expired;
- (iii) a reconnection fee as provided in part III is paid before reconnection is given.

Should the consumer require reconnection before the expiry of two months both the reconnection fee and the monthly minimum charge will have to be paid by the consumer. The life of the contract will not be extended in such cases.

(c) When a consumer leaves his installation connected to the licensee's mains, but locks up the meter or otherwise make it inaccessible for reading by the employees of the licensee for the first month of such inaccessibility the consumer will be charged the monthly minimum. If in the next month the meter is accessible for reading, the consumer will be charged the actual consumption less the above minimum, but, subject to the monthly minimum. If on the other hand the meter remaining inaccessible in the second month also the consumer will be served with 24 hours' notice (Section 20 of the Act) to open his premises for the reading of the meter by any employee of the licensee at a fixed time and date; if the meter is now made available for reading, the consumer will be charged the actual consumption less the minimum charged or paid for the first month of inaccessibility, subject to the monthly minimum. If the meter remains inaccessible even after 24 hours' notice the premises will be disconnected. For that month also the monthly minimum charge will be charged to the consumer. If the meter is made accessible subsequent to the disconnection for purposes of reading the meter and settling accounts or for reconnection of the service as the case may be, the consumer will be charged the actual consumption less the two minima charged or paid for the two months of inaccessibility subject to the proportionate minimum for the period of inaccessibility of the meter upto the time of disconnection. If the consumer applies for reconnection, fees under clause B.1 of part III of these conditions will be collected before reconnection.

18. *Accuracy of meters.*—Should the consumer dispute the accuracy of any meter which is not his own property, he may, upon giving notice and paying the prescribed fee, have the meter tested by the licensee or the Electric Inspector, ..... in accordance with Section 26 of the Act. In the event of the meter being tested by the licensee and found to be beyond the limits of accuracy as prescribed in the Indian Electricity Rules, in

force from time to time, the testing fee shall be returned and the amount of the bill adjusted in accordance with the result of the test taken with respect to the meter readings of the three months prior to the month in which the dispute has arisen, due regard being paid to conditions of occupancy during the months. In the event of the test being undertaken by the Electric Inspector for ....., and the meter being found to be incorrect, the period during which the meter shall be deemed to have been incorrect, and the amount of energy supplied to the consumer during this period shall be decided by the Electric Inspector for ....., whose decision shall be final. Rent for the meter for the period it is found inaccurate will not be charged by the licensee.

The licensee may remove the meter for the purpose of testing it in his laboratory.

19. *Discontinuance of Supply.*—(a) If any consumer adopts any electrical appliance which is likely to affect injuriously the supply to other consumers or uses the energy supplied or deals with it in any manner so as unduly or improperly to interfere with the efficient supply of energy to any other person by the licensee, or fails to keep in proper order any meter belonging to him by which the supply is registered, the licensee may discontinue the supply so long as such an appliance is so adopted or the energy is so used or dealt with or the meter is not kept in proper order, as the case may be.

(b) The licensee shall not be bound to give or continue the supply if the Electric Inspector for..... or other competent person appointed by the ..... Government is satisfied that the electric supply-lines, fittings, works or any other apparatus within the said premises are not in good order and condition and are likely to effect injuriously the use of energy by the licensee or by other persons.

(c) Any consumer who after having been duly notified refuses to permit or fails to give an authorised representative of the licensee reasonable facilities to enter any premises to which energy is, or has been supplied for the purpose of testing or inspecting the installation of the consumer, shall be liable to have the electricity supply discontinued after the expiry of 24 hours' notice in writing in accordance with Section 20 of the Act.

20. *System of supply.*—Supply of energy shall be given by the licensee on the following system.—

(i) *Low Voltage.*—Direct Current or Alternating Current, Single phase, 50 cycles, 230 volts between phase and neutral at the consumer's terminals.

(ii) *Medium Voltage.*—Direct Current or alternating current three phase, 50 cycles, 400 volts between phases, at the consumer's terminals.

(iii) *High Voltage.*—Alternating current, three phase, 50 cycles, 11000 volts between phases, at the consumer's terminal.

21. *Classification of installations.*—A. C. System.—(a) Two-wire single phase 230 volts—

(i) General supply not exceeding 10 amperes.

(ii) Motive power installations upto 1 BHP in aggregate.

(b) Four-wire, three phase, 230 volts between phase wires and neutral—General supply exceeding 10 amperes.

(c) Three-wire, three-phase, 400 volts between phases—Motive power installations of over 1 BHP.

D. C. System.—(a) Two-wire 230 volts—

(i) General supply not exceeding 10 amperes.

(ii) Motive power installations upto 1 BHP in aggregate—(b) Three-wire 460 volts between outers—Motive power installations of over 1 BHP.

22. *General Wiring Conditions.*—(a) *Mains.*—The consumer mains shall in all cases be brought back to the licensee's point of supply and sufficient cable shall be provided for connecting up with the licensee's apparatus.

(b) *Switches and Fuses.*—The consumer shall provide linked quick break main switches and a single pole fuse on each conductor except the neutral conductor which shall be fixed as near as possible to the licensee's meter board.

(c) *Balance of installation.*—If the connected load of any installation exceeds 10 amperes at 230 volts, the installation shall be wired on the group system,

separate neutral wires being brought back in each case to the licensee's point of supply. An approved type of double pole linked switch shall control each main circuit. The lamps, fans or any other apparatus of which the installation consists shall be so grouped that under normal working conditions the current will be balanced and no current will be flowing in the neutral wire.

(d) *Medium voltage supply*.—With medium voltage supply, i.e., above 250 volts and upto 650 volts, the licensee's meter and service cut-outs shall be enclosed in a strong teakwood box suitably ventilated and provided with a hasp, staple and lock. All wires between which a difference of potential of over 250 volts exists shall be made inaccessible to unauthorised persons or enclosed in an earthed metallic casing or conduit. A "Caution" Board printed in Hindi and the local language of the district shall be fixed thereto.

(e) *Overhead Mains*.—In order to save the expense of a long underground service on private property, a consumer may, with the licensee's approval, erect a pillar on that portion of his property which is nearest to the licensee's supply mains into which the service shall be laid and from which the consumer shall run overhead mains to his premises. These overhead mains shall constitute a portion of his installation and shall be laid in compliance with the Indian Electricity Rules in force from time to time. An efficient choking coil and lightning arrester may be fixed at the commencement of the overhead line at the consumer's cost should he desire the same, as an additional protection for his installation.

(f) *Earthing*.—Gas pipes shall on no account be used for earthing purposes.

(g) *Domestic heating and cooking*.—A special circuit for heating and cooking shall be run from the licensee's point of supply. Wall plugs used on these circuits shall be of the three pin type, the third pin being an earth connection. Two pin plugs or lighting sockets shall not be allowed. All appliances used in the bathroom for heating or washing purposes or in any damp location must be effectively earthed.

(h) *Plugs*.—All plugs shall be switched on the live wire and not on the neutral.

(i) *Wiring*.—Single leads shall not be allowed to be run separately in iron conduit.

(j) *A. C. Motor installation*.—Motors shall be provided with control gear so as to prevent satisfactorily the maximum current demand from the consumer's installation exceeding the limits given in the following schedule at any time under all possible conditions. Failure to comply with these regulations will render the consumer liable to disconnection from the supply on account interference with the supply to other consumers.

Nature of supply	Size of installation	Limit of maximum current demanded
Single phase	Upto and including 1 BHP	Six times full load current.
Three phase	Above 1 BHP and upto and including 10 BHP	Three times full load current.
	Above 10 BHP and upto and including 15 BHP	Twice full load current.
	Above 15 BHP	One and a half time full load current.

Motor circuits shall be controlled by a triple pole linked switch protected by a no-volt release and T. P. fuses (or overload releases). It is important that the release should be maintained in thorough working order. Wiring for motors shall be run with all three-phase wires bunched in a single metallic conduit, which shall be efficiently earthed throughout and connected to the frame of the motor from which two separate earth wires shall be run. The minimum size of the earth wire permitted is No. 14 S.W.G. All motors shall comply in every respect with the Indian Electricity Rules, in force from time to time.

Motors above 1 BHP shall be wound for three-phase, 400 volts between phase.

(k) *Power Factor of Apparatus*.—The apparatus shall have a power factor of not less than 85 per cent at normal working load.

Intending consumers are advised to consult the Engineer of the licensee before ordering their motors, as in some cases it may be practicable to relax the starting current limit dependent on the location and conditions of working.

### 23. *Saving rights.*

Nothing in these conditions shall abridge or prejudice the rights of the licensee and the consumer under the Indian Electricity Act, 1910 or any rules thereunder and the Electricity (Supply) Act, 1948.

## PART II

### SCHEDULE OF RATES

(To be filled in by the licensee)

## PART III

### SCHEDULE OF SERVICE & MISCELLANEOUS CHARGES

**A.—Charges for service line.**—One hundred feet of service line from distributing mains, but not on the property for which a requisition for supply of electrical energy is received, shall be laid free of charge. The charges for the rest of the service line shall be recovered on the basis of the actual cost in accordance with condition No. 6 of the conditions of supply plus 15 per centum of the labour charges to cover supervision charges.

Extensions or additions to service lines to meet increased maximum demand will be charged for on the same basis.

### **B.—Miscellaneous Charges—**

Item No. 1	Nature of charges 2	Amount of charges 3
---------------	------------------------	------------------------

#### **1. Re-connection fees—**

(a) For installations up to 10 KW— .

(i) at cut outs.

(ii) at over-head mains.

(iii) at underground mains.

(b) For installations over 10KW 25 per cent. added to the charges under item (a) above.

(c) If the same consumer is re-connected within 12 months of the date of last re-connection, 50 per cent. will be added to the charges under items (a) and (b) above.

#### **2. Meters—**

(a) Hire of meter, where it is the property of the licensee, per meter per mensem—

(i) A. C. Single phase meter.

(ii) A. C. polyphase meter.

(iii) Demand or special type meter.

**NOTE.**—For the first month of service connection or on re-connection, the meter rent will be 50% only if the period is 15 days or less, and full if more than 15 days. For the month in which meter is removed the rent will be calculated on similar basis.

(b) Removing of meter at consumer's request.

(c) Refixing of meter at consumer's request.

(d) Changing meter for one of higher capacity only at the request of the consumer.

#### **3. Testing—**

(a) Installations—

(i) The first test and inspection will be carried out free of charge but should any further test or inspection be necessitated by faults in the installation or by non-compliance with the conditions of supply per extra test or inspection.

(ii) Periodical testing at consumer's request, per test.

(b) Meters—

(i) A. C. Single phase meter.

(ii) A. C. polyphase meter.

(iii) Demand or special type meter.

1

2

3

## 4. Replacement of.—

- (i) Licensee's fuse
- (ii) Consumer's fuse.

NOTES.—(i) All charges except those under items 2(a) and 4 are payable in advance.

- (ii) The dispute between the consumer and the licensee regarding accuracy of meter or any other indicator may be referred by either party to the Electric Inspector for..... for settlement.

## APPENDIX 'A'

*Application and Agreement for Electric Supply for Domestic/Industrial purposes*  
APPLICATION NO. CONNECTION NO.

To

The Electrical Engineer/Secretary/Manager,  
.....Electric Supply Co., Ltd.,  
.....

I/we hereby agree to take from the.....Electric Supply Co., Ltd., at the premises stated below a supply of electrical energy not exceeding the connected load of my/our installation as stated below for a period of not less than two years from the date of commencement of supply and I/We hereby further agree to pay for the said supply at the tariff rates and on the conditions of supply in force, from time to time, and also to pay for all such other proper charges as become due by me/us from time to time at rates as prescribed in Part III of the Conditions of Supply. I/we further agree that I/we lodge with you a deposit calculated as prescribed in the licensee's Conditions of Supply and I/we hereby declare that the said Conditions of Supply have been perused by/read to me/us and I/we agree to be bound by the provisions of clause VI of the Schedule to the Indian Electricity Act, 1910 and .....Electric Licence, 19.... I/We hereby request you to supply the required energy within one month or such longer period as the Electrical Inspector for.....may allow from the date of the requisition.

I/We further require you to supply me/us with the necessary meter/meters on hire in terms of Section 26 of the Indian Electricity Act, 1910. I/We agree to give you such security as may be required for the price of the meter/meters, whenever called upon to do so.

The necessary requisition form duly filled in is attached herewith.

Signature of applicant

Present address

Signature &amp; address of witness

Dated

Accepted on behalf of.....Electric Supply Co. Ltd.,

Signature

.....  
Electrical Engineer  
Secretary/Manager.

Dated

## ANNEXURE VII

*Form of requisition under clause V (4) of the Schedule to the Act*

To

Name of Licensee.

\*We the undersigned, being owners or occupiers of premises situated in or upon ..... street, within the "area of supply" specified in the Licence, 19 ....., do

+The Government of  
with public lighting of  
in the

(the) ..... of ..... being charged  
street, within the area of supply specified  
Licence, 19 ....., do

hereby require you, in pursuance of clause V of the Schedule to the Indian Electricity Act, 1910, to provide, within six months of the date of this requisition, distributing mains throughout the said streets§

Dated at

The

day of

19

\*In the case of six or more owners or occupiers.

†In the case of State Government or a local authority.

‡The local authority's name will have to be inserted.

§Or such part of the street as may be specified.

### ANNEXURE VIII

*Form of Requisition for supply of energy under Clause VI(5) of the Schedule to the Act*

To

(Name of Licensee)

Sir,

I/We hereby require you, in accordance with clause VI of the Schedule to the Indian Electricity Act, 1910 within one month or within such longer period as the Electric Inspector may allow, from the date of this requisition to supply energy for the premises owned/occupied by me/us, and situate within the area of supply specified in the Licence, 19

I/We further require you to supply me/us with the necessary meter/meters on hire in terms of Section 26 of the Indian Electricity Act, 1910. I/We agree to give you such security as may be required for the price of the meter/meters, whenever called upon to do so.

2. Applicant's Name.

Occupation/Designation.

Class of Premises.

House No. and/or

Name of the Premises.

Street

Town

Village or Taluka

Locality

Owned/Tenanted by

Written permission of the Landlord tendered .....  
Yes or No/Not applicable.

3. The following are my/our requirements:

A.	Domestic or Residential	No. of points	Wattage	Total Wattage.
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(a) Lights & Fans.

(b) Heating & Small Power.

B. Commercial.

(a) Lights & Fans.

(b) Heating & Small  
Power

C.	Industrial Power	Motor and/or apparatus	No. of points	H.P. and KW	Total H.P. and KW	Purpose
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(a) Low Voltage

(b) Medium voltage.

(c) High voltage.

D. Other purposes.

4. Total connected load applied for.....Watts/kilowatts..

5. This requisition is for—

(1) A new Service.

(2) A sub-service from one existing service.

The name and address of the consumer whose service is to be tapped.

His Service No. is

(3) An extension to my existing installation from Service No.

(4) A re-connection of Service No.

(5) A change of name from                      Service No.

6. The system of wiring will be.

7. The wiring work will be carried out by:

Name

Address

Applicant's signature.

Present address.

Dated the

day of

19

NOTES.—1. The applicant is requested to complete the clause referring to this requisition and to strike out the clauses which are inapplicable.

2. Under clause VI(1) 1st proviso of the Schedule to the Indian Electricity Act, 1910, the licensee shall not be bound to comply with any such requisition unless and until the person making it—

(a) within fourteen days after the service on him by the licensee of a notice in writing in this behalf, tenders to the licensee a written contract in the form, approved by the State Government duly executed and with sufficient security binding himself to take the supply of energy for not less than two years to such amount as will produce at current rates charged by the licensee, a reasonable return to the licensee; and

(b) if required by the licensee so to do, pays to the licensee the cost of so much of any service line as may be laid down or placed for the purposes of the supply upon the property in respect of which the requisition is made, and of so much of any service line as it may be necessary for the said purposes to lay down or place beyond one hundred feet from the licensee's distributing mains, although not on that property.

3. In lieu of the contract referred to in Note 2(a) above, the licensee is prepared to accept a declaration in the following form, subject to deposit of any required securities by the applicant:

#### DECLARATION

I/We hereby declare that I/We desire to have and agree with the licensee to take a supply of energy for the above mentioned purposes for a period of not less than two years from the date of commencement of the supply and to be bound by the provisions of clause VI of the Schedule to the Indian Electricity Act, 1910, and by the licensee's charges, appropriate tariffs applicable to me/us and conditions of supply as are from time to time in force.

One rupee stamp.

Applicant's signature.

#### ANNEXURE IX

Form of order under sub-rule (4) of rule 5.

To

Supplier, consumer, owner, or  
occupier

1. Whereas it appears to me that you have not complied with Rule  
of the Indian Electricity Rules, 19                      (in the following respect\* namely,

you are hereby called upon to comply with the said rule on or before the  
.....day of .....19 and to report compliance in  
writing to me.

2. An appeal may be filed against this order under sub-rule (4) of Rule 5 of the Indian Electricity Rules within three months of the date on which this order is received by you, but this order must be complied with, notwithstanding such appeal, unless the appellate authority, on or before the date specified in paragraph 1 above, suspends its operation.

Dated at

The

day of

19 .

Signature.

*Electric Inspector*

*Officer appointed under sub-rule (4) of Rule 5.*

\*Particulars to be given where necessary.

### ANNEXURE X

*Form of Annual Return for Mines.*

*See rule 111*

This form must be correctly filled up by the owner, agent or manager and sent to the Inspector not later than the first day of February in every year.

#### PART A

year ending

19 .

Name of Mine

Situation of Mine

{ State  
District

Postal address of Mine

Name and address of owner

Name of Agent

Name of Manager

#### PART B

1. System of Supply (whether direct current or alternating current).

Voltage of supply.

Periodicity (if alternating current).

Source of Supply.

2. Voltage at which electricity is used for—

Lighting

Power.

3. Particulars of Motors, etc:—

#### POWER

(a) On surface.

Type H. P./KW of motor/apparatus and voltage	Type of control gear	Location	Purpose of use





## 3. Particulars of Motors, etc., in use on the field:—

## (a) On wells.

No. or other identifying mark of well	Drilling or pumping	Type and H. P. of Motor	No. of lamps and type	Other electrical appliances

## (b) Not on wells.

Type and H. P. of Motor	Purpose for which used	Identifying mark on map

## 4. Other electrical appliances, not included in item 3, in use on the field.

Appliances	Type and size in K. W.	Purpose for which used	Identifying mark on map

## ANNEXURE XII

*Log Sheet for Mines and Oil-fields.*

[See sub-rule (5) of rule 131].

Daily Log sheet for

1. Name of electrician in charge:—

2. Report as to:—

(a) Condition of the insulation of the system:—

(b) Specified defects of insulation (particulars of each failure of apparatus should be given):

(c) Accidents or dangerous occurrence (including any cases of electric shock and any cases of open sparking in apparatus in use in places where rule 126 applies):—

- (d) Disconnections and reconnections of the supply as required by rule 126(2).
- (e) Examination of earth fault detectors or recorders as provided by rule 116(3).
- (f) Examinations of apparatus as provided by rule 131:—
  - (i) Routine examinations as required by clause (a) of sub-rule (3) of rule 131.
  - (ii) Special examinations\* as required by clause (b) of sub-rule (3) of rule 131.

3. Remarks:—

Signed

Examined by

*Electrician*

*Manager.*

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*Note.*—This log sheet should be filled in as completely as possible. If for instance, there are no defects of insulation to report, the word "none" should be written in the vacant space.

\*State which apparatus has been examined or tested and result.

[No. EL-II-352(1).]

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N. S. VASANT,  
*Secretary, Central Electricity Board.*

